



CHIEF OFFICE,
LONDON:
42-CANNON ST.
E.C.

Branch Offices:
MELBOURNE,
SYDNEY,
and NEW YORK.

Prix de l'abonnement:—The Chemist and Druggist une fois par semaine, et l'agenda du Chemist and Druggist une fois par an, 12.50 francs par an, franco.

Abonnementspreis:—The Chemist and Druggist einmal wöchentlich, und Notizkalender des Chemist and Druggist einmal im Jahre, 10 Mark jährlich, frei in's Haus geliefert.

Precio de suscripción:—The Chemist and Druggist, una vez por semana, y el Agenda del Chemist and Druggist una vez al año. 12.50 pesetas anuales, franco.

No. 491. VOL. XXXV.

SEPTEMBER 14, 1889.

{ Subscription, 10s. Per Annum, Including
Diary, Post Free the World over.
Single Copies, 4d. Each, Post Free.

ALLEN & HANBURY'S,

Manufacturers of Cod Liver Oil, Malt Extract, and Pharmaceutical Preparations,

Also of MEDICATED and other LOZENGES and IMPROVED JUJUBES,

WHOLESALE & EXPORT DRUGGISTS.

PLough COURT, LOMBARD STREET, LONDON, E.C.

Works—Bethnal Green, E., and Longva and Kjerstad, Norway.

TELEGRAPHIC ADDRESS—"ALLENBURY'S LONDON."

VOICE TABLOIDS.

Composed of COCAINE, Chlorate of Potash, and Borax.

Impart a clear and silvery tone to the voice. Easily retained in the mouth while singing or speaking. Now used by the leading singers and public speakers throughout the world.

DIRECTIONS—A single Tabloid may be slowly dissolved in the mouth to remove huskiness or hoarseness.

Supplied to the Trade in beautifully graven white metal boxes, blue silk label, at 8s. and 16s. per dozen. Retail prices, 1s. and 2s. per box.

May be obtained of all Wholesale Houses.

BURROUGHS, WELLCOME & CO., Manufacturing Chemists, Snow Hill Buildings, E.C.

Chiswick Soft Soaps.

Packed in Tins, 1, 2, 3, 4, and 7 lbs. each; Casks, 14, 28, and 56 lbs.; Firkins, 64 lbs. net; half ditto, 32 lbs., and Bulk, also packed in hermetically sealed Drums for Export, 28, 56, and 112 lbs. each, net.

SPECIALITIES—"IMPERIAL," the best for domestic use. "FINEST PALE" and "CROWN," specially made for scouring purposes, making Sheep Dip, &c. "CHISWICK POTASH SOAP," special for laundry use and cleaning fine woollen and silk goods. "CARBOLIC" (10 per cent. acid), for disinfecting purposes, stable and kennel use. "OLIVE," for wool washing. "HORTICULTURAL," for fly, mildew, &c. P. B. "SAPO MOLLIS," &c., &c.

The Chiswick Soap Company, Chiswick, London.

MAY & BAKER

(W. G. BAKER, R. C. HEATH, T. TYRER, W. E. B. BLENKINSOP),

Manufacturing Chemists,
BATTERSEA, LONDON, S.W.

MEDALS, 1851, 1855, 1862, 1867, 1885, 1887, 1888.

MAKERS OF

PURE MINERAL ACIDS.

BENZOIC ACID AND ALL BENZOATES.

(PURE)

ETHERS

(METHYLATED)

For ANÆSTHETICS, PHOTOGRAPHY, and ICE MAKING.

BISMUTH PREPARATIONS,

SOLUTION OF AMMONIO-CITRATE OF BISMUTH, P.B.

CORROSIVE SUBLIMATE,

RED AND WHITE PRECIPITATE,

PURE CALOMEL,

AND EVERY MERCURIAL PREPARATION.

CONCENTRATED FRUIT ESSENCES AND FLAVOURS,

PHENACETIN,

The New Anti-Pyretic and Anti-Neuralgic.

SULFONAL,

The New Hypnotic.

CYANIDES OF POTASSIUM

FOR GOLD AND SILVER PLATING AND PHOTOGRAPHY.

LIQUID AMMONIA, '880.

REFINED CAMPHOR,

IN BELLS OR TABLETS, BY A NEW PATENT PROCESS.

MAY & BAKER'S Manufactures may be ordered
through any Wholesale House.

STEVENSON AND HOWELL

**FELLOWS OF THE
CHEMICAL
SOCIETY
&c. &c.**

CYTRA QUALITY
SOLUBLE ESSENCE
OF
JAMAICA
GINGER
A PERFECT
GINGER ESSENCE
See The Lancet July 3rd 1886

HIGHLY
CONCENTRATED
FRUIT
ESSENCES

HARMLESS
VEGETABLE
COLOURS
FREE FROM ANILINES

SOLUBLE
CONCENTRATED
COLOURINGS
FOR ALL LIQUIDS

ALL MATERIALS
REQUIRED BY
MINERAL WATER
MAKERS,
CORDIAL MAKERS,
RECTIFIERS & DISTILLERS,
BREWERS, &c.

MANUFACTURING CHEMISTS
DISTILLERS
AND IMPORTERS OF
ESSENTIAL OILS

PURE CONCENTRATED
OF
GUARANTEED PURITY

SOLUBLE ESSENCES

FRUIT-ESSENCES



PURE COLOURINGS

OF EVERY DESCRIPTION

ANALYTICAL AND CONSULTING CHEMISTS

STANDARD WORKS,

95A SOUTHWARK ST., LONDON S.E.
AND 128, HOPE ST., GLASGOW.

SELECTED
OIL OF LEMON
GUARANTEED
ABSOLUTELY PURE

SOLUBLE ESSENCE
OF
LEMON.
SWEET ORANGE
BELFAST GINGER ALE
TANGERINE
FRUIT
CHAMPAGNES.
2s. &c.

AMERICAN
FOAM SYRUP,
FOR GIVING A CLOSE
CREAMY HEAD TO
ALL BEVERAGES

ALL MATERIALS
REQUIRED BY
CONFECTIORS
BISCUIT MAKERS
WHOLESALE
TOBACCONISTS.
SOAP MAKERS,
PERFUMERS,
&c. &c.

Paris Exposition, 1889.

The Exposition at Paris this year is probably the most magnificent display of International Exhibits ever seen. Almost all the leading countries are liberally represented. Visitors should not fail to see our display in the American Section, opposite the Post Office. Our Perfumes have found their way into all civilised countries, and this because of their excellent quality. We do not aim for a showy display of package, but for superiority in the Perfume. Consumers are often as good judges as the Perfumer himself. A few points will suffice. If it's sweet, that's the most. Then it must be fine-grained, soft, and free from sharpness. All bottled Perfumes are combinations of different flower odours. The happiest results of the blending of these flowers are well known, and the names are familiar to all. (See list below.) If they are made of the right strength and richness, they are the safest odours for the dealer to handle year in and year out. Some of the principal odours are :—

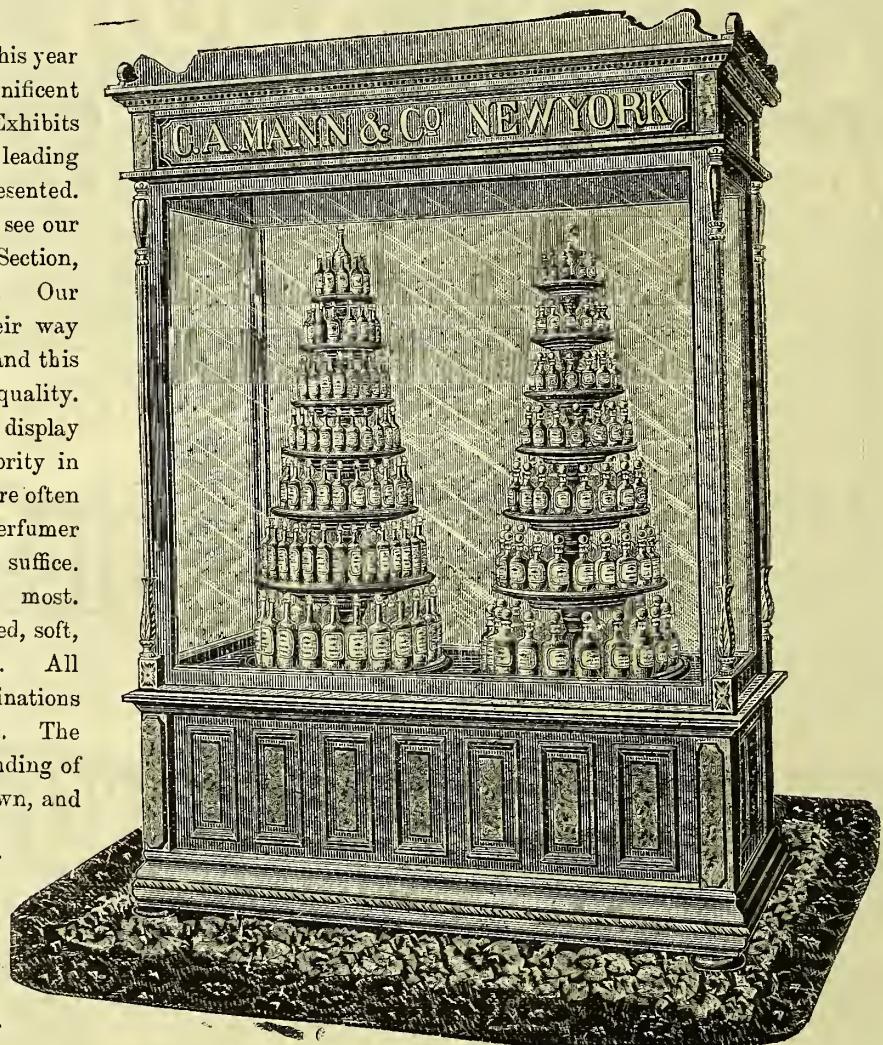


EXHIBIT AT THE PARIS UNIVERSAL EXPOSITION OF 1889.

White Rose

Lily of the Valley

New Mown Hay

Ylang Ylang

Frangipanni

Jockey Club

Heliotropē

Violet

Stephanotis

Prairie Flower

White Lilac

Wild Lotus

Sweet Briar

Carnation Pink

Moss Rose

PUT UP IN GLASS-STOPPED BOTTLES, AS FOLLOWS:—

$\frac{1}{2}$ Ounce Size	per gross	\$30.00	2 Ounce Size	per gross	\$96.00
$\frac{3}{4}$ "	"	42.00	4 "	"	144.00
1 "	"	48.00	8 "	"	288.00
$1\frac{1}{2}$ "	"	72.00	1 lb. (18 Fluid Ounces)...	per dozen	48.00

ONE DOZEN IN BOX, EITHER IN SINGLE OR ASSORTED ODOURS, AS REQUIRED.

Additional information and Illustrated Catalogue furnished upon application.

C. A. MANN & CO., 48 Murray Street, NEW YORK, U.S.A.

FIRE.

Although our Wandsworth Factory was completely burned this afternoon, we have a fair stock of all goods in our warehouses in Snow Hill and Hosier Lane, and hope to be able to fill all orders promptly. Our new apparatus in the Dartford Factory is nearly complete, and our machine shop in working order for turning out new compressing machines.

BURROUGHS, WELLCOME & CO.

SNOW HILL BUILDINGS, E.C.

September 12, 1889.

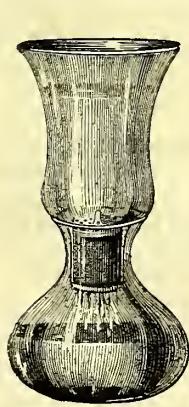
MAWSON'S FILTERS.

(IMPROVED PATENT.)

SPECIALLY SUITED TO WARM COUNTRIES.

THE ONLY FILTERS PERFECTED BY THE AID OF EXACT ANALYSIS.

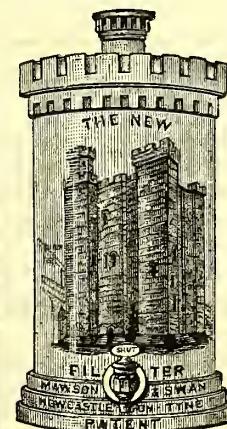
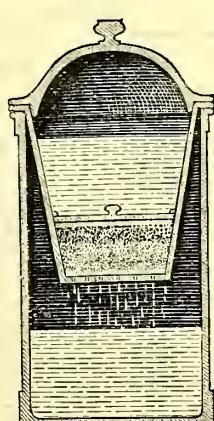
EARTHENWARE.



Plain Glass .. 4/6
Do., with handle .. 5/6
(including recharges)



Size—
Price—
1 14/6, 2 21/, 3 27/, 4 35/, 6 50/ each.



White, decorated 1 2 4
Earthenware.. 35/ 45/ 65/



Engraved Glass .. 6/6
Do., with handle .. 7/6
(including recharges)

THE ABOVE ARE RETAIL PRICES

SIMPLE, SAFE, EFFICIENT, EASILY & ECONOMICALLY RENEWED.

Proprietors—MAWSON, SWAN & WEDDELL, NEWCASTLE-ON-TYNE.

WHOLESALE AGENTS—London: Maw, Son & Thompson; Bentley & Sons; Bourne, Johnson & Latimer; William Toogood; Lynch & Co.; Barclay & Sons. Manchester: Wooley, Sons & Co. Liverpool: Evans, Sons & Co.; J. H. & S. Johnson; Symes & Co. Birmingham: Southall Bros. & Barclay. Glasgow: Glasgow Apothecaries' Co. Belfast: Grattan & Co. Cork: Goulding & Co.

Carriage free from the Proprietors on receipt of remittance, or may be ordered through any Chemist in the United Kingdom.

ESTABLISHED 1842.

THE SCHOOL OF PHARMACY

of the Pharmaceutical Society of Great Britain.

Chemistry, Prof. DUNSTAN, M.A., &c.
 Botany, Prof. GREEN, B.Sc., &c. Materia Medica, Mr. E. M. HOLMES, F.L.S. Practical Chemistry, Prof. ATTFIELD, F.R.S., &c.
 Pharmacy, Prof. GIBSON, F.R.S., &c. Practical Pharmacy, Mr. JOSEPH INCE, F.C.S., &c.
FORTY-EIGHTH SESSION, 1889-90.

Application for admission to the School, for Prospects, or for further information may be made to the Professors or their Assistants in the Lecture Room or Laboratories, 17 Bloomsbury Square, London, W.C.

"A Standard Work of Reference for Pharmacists." Just issued, enlarged and re-written, £50 pages, 5th edition, 10s. 6d.

PHARMACY, MATERIA MEDICA AND THERAPEUTICS,

Is a complete commentary on the B.P., and contains sections upon more than 300 non-official remedies, including every reward and remedial agent of importance up till present date; also sections upon the Science of Compounding Dispensing, and Prescribing Remedies, with Original Autograph Recipes in Latin, French, and German; Latin Grammar; and Glossary. B.P.C. Formulae, &c., &c.

By W. WHITLA, M.D., Examiner in Botany and Materia Medica, Pharmaceutical Society L., and University of Glasgow, &c., &c.

LONDON HENRY RENSHAW, 356 STRAND.

THE LONDON HOMEOPATHIC HOSPITAL
AND MEDICAL SCHOOL,
GREAT ORMOND STREET.

A NEW WARD, unoccupied for want of funds, is much needed for Male Patients, and will be opened so soon as sufficient funds to support it are received. The Hospital now contains eighty beds. Trained Nurses are sent out at moderate fees for Medical, Surgical, or Accouchement cases, the latter specially Certified.

A. CROSSL. Secretary.

THE LIVERPOOL
SCHOOL OF PHARMACY
36 OXFORD STREET, LIVERPOOL.

Principal—J. S. WARD, Ph. Ch., F.C.S., &c.

THE NEXT SESSION (1889-90) will commence on Monday, September 2, and those intending to join the course, September to December, are requested to send in their names at once.

THE PAST SESSION has been a very successful one: out of 33 sent in for the "Minor" 25 have passed, as against 18 for the previous Session and 12 for the Session 1886-87.

SCHOLARSHIPS.—The Redwood Scholarship has been won by a pupil of the Liverpool School, Mr. F. B. Sherlock. . . Two years ago a "Bell" Scholarship was won by another pupil of this school, Mr. W. A. Salter, who afterwards became Pereira Medallist.

Syllabus, Pass Lists, Fees, &c., sent free on application.

"CONCILIO ET LABORE."

THE

MANCHESTER COLLEGE
OF CHEMISTRY & PHARMACY,
225 and 227a OXFORD STREET,
MANCHESTER.

The present Session began on September 2nd, so that Students who have not yet joined their classes are requested to do so without further delay.

W. SPENCER TURNER, Director.

IT WILL PAY YOU to send for Estimates to
MEDICAL AND GENERAL PRINTERS,
BOWERS BROTHERS, 89 BLACKFRIARS ROAD, LONDON, S.E.

10,000 Good Effective Handbills, 7½ in. by 5 in. — — — — — from 12/6 | Memorandums
Superfine Fly Leaf Note Paper — — — — — per ream 8/- | Superfine Envelopes, name on flap — — — — — per 1,000 4/- & 6/-

A UNIQUE ADVERTISEMENT—CHILDREN AND THEIR AILMENTS: HOW TO CURE. A BOOK FOR MOTHERS. Seed, Powder, Cash, Prescription and Recipe Envelopes in all qualities and in every style of printing Counter and Show Bills, Trade Catalogues, Prices Current, Business Circulars, and Ornamental Advertising Books at most moderate charges. Specimens and Estimates free. Terms—Cash with Order.

DON'T ORDER BEFORE SEEING BOWERS' TOILETTE GUIDE AND CALENDAR—CHEAP, GOOD, USEFUL. Special Pamphlet prepared for efficient Advertising. New and Elegant Designs in Types and Ornaments for effective Advertising.

THE OWENS COLLEGE, MANCHESTER

PHARMACEUTICAL DEPARTMENT.

A Course of Instruction, adapted to the requirements of Pharmaceutical Students, is given in the following subjects (commencing OCTOBER 1, and ending in MAY):—

CHEMISTRY AND CHEMICAL PHYSICS.—Tuesday, Thursday, Saturday, 9.30 to 10.30. Prof. DIXON.

BOTANY (LECTURES AND PRACTICAL).—Wednesday, Thursday, 2.30 to 5.30. Prof. WILLIAMSON.

MATERIA MEDICA—Monday, Wednesday, 11 to 12. Mr. ELBORNE.

PHARMACEUTICAL CHEMISTRY—Any three hours daily. Laboratory Course.—Mr. ELBORNE.

PHARMACY AND DISPENSING.—Tuesday, Thursday, 11 to 12. Laboratory Course.—Mr. ELBORNE.

Evening Classes in the above subjects commencing Oct. 7, are also held. A full prospectus will be forwarded on application.

H. W. HOLDER, M.A., Registrar.

THE WESTMINSTER COLLEGE
OF CHEMISTRY AND PHARMACY,
TRINITY SQUARE, BORO', LONDON, S.E.

The Largest Pharmaceutical School in Great Britain.

Open free to Visitors every afternoon from 3 till 4 p.m.

During the past Session 111 Students passed the Minor Examination from this School, in addition to a large number of Major and Preliminary Students.

The next Session will commence on Tuesday, September 3rd.

Students desiring to enter the School on 3rd September should send in their names as early as possible, so that places may be reserved for them.

FEES—Prelim., to the October Exam., £1 1s., January, £3 3s.

Minor, " " " £5 5s., Dec., £9 9s., Until

Qualified, £12 12s.

Major, " " " £4 4s., Dec., £7 7s., Until

Qualified, £10 10s.

12 months' Tuition for Minor and Major, £15 15s.

EVENING CLASSES

Are held every Tuesday, Wednesday, Thursday, and Friday, from 7 till 9 p.m.

WILLS'S UNIVERSAL POSTAL SYSTEM.

N.B.—This course of instruction is continued through the vacation.

FEES—Minor, £1 1s.; Major or Preliminary, 10s. 6d.

OPINIONS OF THE PRESS.

"Those who cannot attend a school of pharmacy will find 'Wills's Universal Postal System' train them in the way they should go."—*The Chemist and Druggist.*

"Mr. Wills, of Westminster College, one of our most thoroughly successful tutors, extends him a helping hand, leaving it simply his own fault, and deserving it, if he blindly labours on in ignorant darkness."—*Magazine of Chemistry and Pharmacy.*

For Prospectus, apply to Messrs. WILLS & WOOTTON

The Chemist and Druggist of Australasia.

The following are the principal contents of the July number :—

EDITORIAL NOTES.

The Centennial International Exhibition M.-da'—A "Person" in Tasmania (import nt decision under the Medical Act)—Friendly Societies in Victoria—Medical Practitioners on Counter Prescribing—The Pharmacy Board of Queensland—A tif-brin and Antipyrin—Strychnine in Snake-bite—The New Zealand Medical Bill—Rabbit Poison—Expiring Trade Marks—Ana or AA.

COLONIAL REPORTS.

New South Wales.—Board of Pharmacy (official report of Monthly Meeting)—Pharmaceutical Society (official report of Monthly Meeting)—Comments on various matters—Miscellaneous and Personal Information—Trade Changes.

New Zealand.—Pharmacy Board (report of Monthly Meeting)—Midland Pharmaceutical Association of New Zealand (official report of Special Meeting re Medical Bill)—Reports on pharmaceutical matters, &c., from Auckland, Christchurch, and Timaru—Trade Items.

Queensland.—Pharmacy Board (official reports of Special and Monthly Meetings)—Text of the first report of the Pharmacy Board of Queensland and presented to both Houses of Parliament—Pharmaceutical Society (official report of Monthly Council Meeting)—The Editor in Brisbane.

South Australia.—Pharmaceutical Society (official reports of Monthly Council and General Meetings)—Miscellaneous Information and Trade Changes.

Tasmania.—Launceston Pharmaceutical Association (report of Special Meeting) Full report of Important Case, "The Launceston Pharmaceutical Association v. Launceston United Friendly Societies' Dispensary"—Trade News.

Victoria.—Pharmacy Board and Pharmaceutical Society (reports of Monthly Meetings)—Friendly Societies in Victoria (report of case, "The Pharmacy Board of Victoria v. The Bendigo United Friendly Societies' Medical Institute and Dispensary")—General and Trade Notes.

Books Received—Correspondence—Patents applied for in all the Australian Colonies.

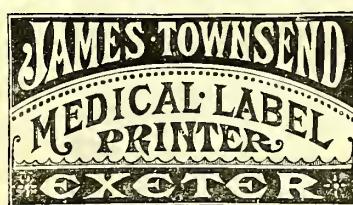
Copies may be obtained at the London Office, 42 Cannon Street, E.C., 6d. each, or the journal will be supplied to subscribers to THE CHEMIST AND DRUGGIST at 5s. per annum, post free.

JAMES TOWNSEND, **LABEL PRINTER**, EXETER.

ALMANACKS FOR 1890

NOW READY. Send for Samples.

ALMANACKS FOR 1890



NOW
READY.
SEND FOR
SAMPLES.

ALMANACKS FOR 1890

NOW READY. Send for Samples.

ALMANACKS FOR 1890

JAMES TOWNSEND, **LABEL PRINTER**, EXETER.

THE WHOLESALE & RETAIL DRUGGISTS' PRICE BOOK
By D. ELLIOTT.
NEW EDITION, revised according to the British Pharmacopoeia,
— 1885. —
Pocket Size, Bound in Leather, Price 3/-, Post Free 3/2.

SACHET, PRESENTATION, CARD, AND HANGING ALMANACKS.

H. SILVERLOCK,
Medical Label and General Printer,
92, BLACKFRIARS ROAD, LONDON. S.E.

Labels of Every Description.

NOW READY
FOR
1890,

Chemists' Counter Bills, second quality, 7/- by 5 ... 10/- CCO, 12/6
Chemists' Counter Bills, second quality, 9 by 5 ... 10,000, 18/-
Chemists' Pill Labels from 1/3 per 1000,
a reduction on large quantities.

THE CLINICAL
CLERKS' GUIDE
TO URINE TESTING.
On 3-fold linen-lined card, 9 in. by 5 in.
Price 7d.

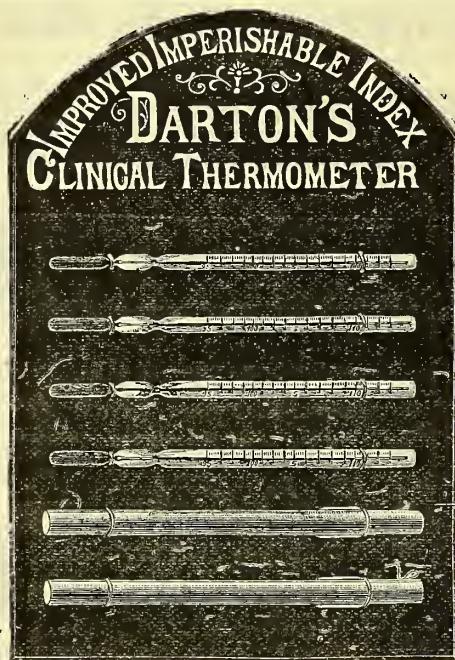
PRICE LISTS. PROSPECTUSES.
SAMPLES FREE
BY RETURN OF POST.

ANALYTICAL EXERCISE FORMS,
FOR Chemical Students.
Arranged by
H. BELCHER THORNTON, F.C.S.
Price 6d. per doz.
forms.

HOW TO ANALYSE SIMPLE SALTS,
SOLIDS AND SOLUTIONS.
Specially intended for Beginners,
by
H. BELCHER TH. THORNTON, F.C.S.
8vo Demy. 46 pages.
Price 1/-
Post Free.

PAMPHLETS. SHOW CARDS.
SAMPLES FREE
BY RETURN OF POST.

ILLUSTRATED TRADE CATALOGUES, &c.



For the convenience of Chemists who are introducing these Instruments, we are now mounting same on an attractive Showcard, chocolate ground, gilt edges and gold letters. Price per doz., including 1 Card, 36/-; ditto, lens front, magnifying, 72/-; Morocco Pocket Case, containing 1 Bent and 1 Straight Clinical, 9/- the set. Kew Certificates to any of the above, 15/- doz. extra.

Special quotation for quantities.

F. DARTON & CO.,
ESTABLISHED 1834.

WHOLESALE OPTICIANS
Makers to
Her Majesty's Government,

45 St. John St., West Smithfield, London, E.C.
Telegraphic Address—EXCEPTIONAL LONDON."

No. 1 Case, price £2 2s.; No. 2 £3 3s.; No. 3, £6 6s.; No. 4, £10 10s.; No. 5, £21
Send for fully Illustrated Catalogue and Descriptive Pamphlet, with Table of
Sights, post free on receipt of trade card.

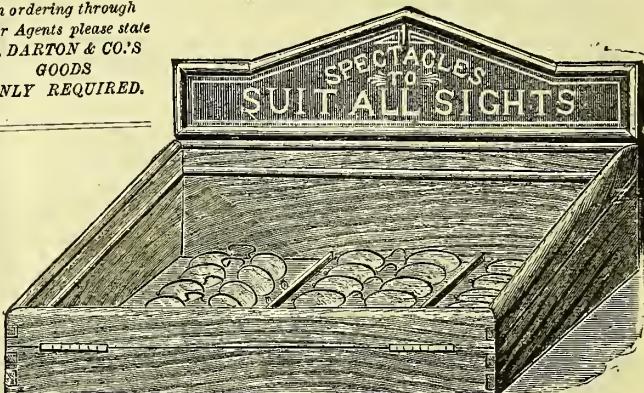
CHEMISTS commencing the Spectacle business will find these Show Cases arranged with an assortment of Spectacles and Folders of all sights, to meet the requirements of purchasers. The quality and quantity may be varied to suit any class of trade at customer's wish. The Spectacle Show Case is of Solid Polished Mahogany, well made and finished, to stand any climate. Large Coloured Show Cards sent with each case, with descriptive pamphlet, &c.

Send for F. DARTON & CO.'S
NEW PRICE LIST FOR 1888.

A FACT!

Darton's 2 Guineas Spectacle Show Case
realises £4 11s.
Darton's 3 Guineas ditto ditto .. £7 6s.
* " 6 " ditto ditto .. £15 12s.
* " 10 " ditto ditto .. £26 15s.
** This case we strongly recommend for Export.*

*In ordering through
your Agents please state
F. DARTON & CO.'S
GOODS
ONLY REQUIRED.*



CHEMICAL AND SCIENTIFIC APPARATUS.

J. ORME & CO.

(Late M. JACKSON & CO.),

Manufacturers and Importers of every description
of Apparatus for Lecturers or Laboratory use.

By Appointment to H.M. Hon. Board of Inland Revenue, Science and
Art Department, Royal School of Mines, Trinity House,
Pharmaceutical Society, &c.

ILLUSTRATED PRICE LISTS ON APPLICATION.

65 BARBICAN, LONDON, E.C.

AWARDED
EIGHT

PRIZE
MEDALS.

NEO-CYCLOSTYLE

(GESTETNER'S PATENTS.)

Is the simplest and most reliable apparatus for Printing Copies of Writings, Drawings, &c. 2,000 Copies can be taken from one original, in PERMANENT BLACK INK. No gelatine, aniline ink, washing, sticky copies, and no file or laborious writing.

THE NEO-CYCLOSTYLE PEN (IMPROVED PATENT) WRITES AS EASY AS AN ORDINARY PEN
Invaluable to Chemists for Printing Counter Bills, &c. Prices from 25s. to 42s. complete.
Mr. A. W. SMITH, Chemist, Pershore, wrote, August 23, 1889:—"I have found your 'Cyclostyle' invaluable.
It has saved me many hours' labour, and not a little expense."

Apply for Specimens of Work and Descriptive List to

THE CYCLOSTYLE CO., 79a Gracechurch Street, LONDON, E.C.

"BUBBLES."

This artistic SHOWCARD, measuring $21\frac{1}{2}$ in. by 30 in.,

the *chef-d'œuvre* of

SIR JOHN E. MILLAIS, B.T., R.A.

produced at a cost of

£20,000,

is now ready for delivery, and a copy will be supplied FREE and Carriage Paid with orders of £5 AND UPWARDS, conditionally upon a fair and proper display being guaranteed. This Showcard (*of which a duplicate copy cannot be supplied*) is a fac-simile reproduction of the original, purchased for £2,200.

A. & F. PEARS.

Depots:

LONDON: 71-75 New Oxford Street, w.c., LONDON.

NEW YORK: 365 and 367 Canal Street, NEW YORK.

MELBOURNE: 132 Collins Street West, MELBOURNE.



PASCALL'S GOLDEN MALTEX

PATENTED.

Contains 25% of Allen & Hanburys' Extract of Malt.
A NOVEL CONFECTION.—MOST SALEABLE.
Delicious Flavour. Brilliant and Attractive Appearance.

SELLS AT SIGHT.

Vide Dr. Tanner's Report, and *The Chemist and Druggist*, April 20th.

1/- Bottles, 9/- per doz.; 1-lb. Bottles, 22/- per doz.; 1-lb. Tins, 20/- per doz.
and in 4-lb. Jars, 1.6 per lb.

OF ALL WHOLESALE HOUSES, OR OF THE MANUFACTURER,

JAS. PASCALL, BLACKFRIARS ROAD, LONDON, S.E.

BOVRIL

IN THE "LANCET" OF NOVEMBER 11, 1865,
BARON LIEBIG SAYS:—

"Were it possible to furnish the market at a reasonable price with a preparation of meat, combining in itself the albuminous together with the extractive principles, such a preparation would have to be preferred to the Extractum Carnis, for it would contain all the nutritive constituents of meat." Again—"I have before stated that in preparing the Extract of Meat, the Albuminous principles remain in the residue, they are lost to nutrition, and this is certainly a great disadvantage."

"BOVRIL" contains the albumin and fibrine in the most perfect possible form, and to those who know the requirements of the human system and the constituents of food, it will be apparent that this albumin and fibrine is identical with what the body requires for recuperation, and that as a perfect form of concentrated nourishment it must supersede any animal aliment at present known.

"BOVRIL" has solved the problem of the great German Chemist

"BOVRIL" is Baron Liebig's ideal realised.

OFFICES:—30 FARRINGDON STREET, LONDON.

PEPTONATE OF IRON
DENAEYER'S PEPTONES
SOLE MAKERS
DENAEEYER'S PEPTONES
LONDON
PEPTONE OF MEAT
REGD TRADE MARK

DENAEEYER'S

LIQUID PEPTONES STERILIZED

Free from microbes!
Keep good for ever in all Climates.
118 BISHOPSGATE STREET WITHIN, LONDON, E.C.

DENAEEYER'S PEPTONATE OF IRON. A bland, non-irritating and most easily assimilable ferruginous preparation.
For debilitated constitutions children, and aged people.

DENAEEYER'S PEPTONE OF MEAT. A powerful restorative for all ailments of the stomach, stimulates general nutrition.
Is retained when the stomach rejects all other food. Pleasant to taste.
Or all Chemists and Wholesale Houses.

TOBACCO

CIGARS & CIGARETTES.

M. & R. PEACOCK,
Tobacco, Cigar, & Cigarette
Manufacturers,

KINGSLAND RD., LONDON, N.E.

Sole Manufacturers of the Celebrated
Brands—

"ROYAL CHARTER"

AND

"UPPER CRUST."

Sold in Packets only.

Those who deal in these Goods, or intend doing so,
should write to the above Manufacturers for
Price List.

An Offer to Chemists.

We are about to send literature on "Vinolia" to various chemists, and if all those chemists who have stocked our preparations will at once notify us of this fact by a post-card, we will, without delay, inform the medical men in their locality of the fact. In this way Chemists may increase somewhat their business, and doctors labour under the advantage of knowing precisely where our goods can be obtained.

Reason how we may, "Vinolia" has proved itself a necessity in medical practice by its use in numberless cases of Eczema, some of them of very long standing having progressed to recovery. Not all cases have been cured, but this is no drawback, for reasonable people are not always looking for cure alls. One thing, however, can be said of "Vinolia;" it is that it will, without fail and at once, relieve itching and irritation of the skin from any and every cause. For sunburns, after shaving, and for rashes, there probably has never been anything so satisfactory to use. There is one thing also that can be said of "Vinolia" Soap, and that is, that its distinctive characteristic is that it contains extra fatty matter, it is made from the very best and finest materials that can be procured, it is manufactured on the most absolutely scientific lines, it is turned out in a perfectly neutral state, and if, peradventure, in washing, any free alkali is by any chance dissolved, its action upon the skin is completely provided against. It is of course well for all to bear in mind that the skin of the townsman, and those who lead a sedentary life, is not over abounding in fat, and tends to become dry and hard, and to lose its velvety feel; all the more reason that a proper soap be used; all the more occasion then that the skin be promoted in its remedial efforts by such a plastic emollient cream as "Vinolia."

Please send us a post card at once if you have stocked "Vinolia" and "Vinolia" Soap.

PRICES.

"VINOLIA" (for Eczema, Pruritus, &c.), 1s. 9d. and 6s. per box.

"VINOLIA" SOAP (Toilet), 2s. 6d. per box of 3 tablets.

"VINOLIA" SOAP (Medical), 2s. per box of 3 tablets.

Agents for BLONDEAU & CIE.:

ROBERTS & CO., 76 NEW BOND STREET, LONDON,

AND

5 RUE DE LA PAIX, PARIS.

EXCHANGE COLUMN.

This section of "The Chemist and Druggist" must be closed for press by Thursday noon of each week.
Remittances payable to EDWARD HALSE.

TERMS

Advertisements in this department must be paid for in advance. From this rule no deviation can be made. Insertions are charged at the rate of $\frac{1}{4}d$. per word, provided the advertiser attaches his name and address, for each word of which he must also pay at the same ratio; or if he pays $1d$. per word, his name and address will be registered and a figure attached to his advertisement. All correspondence referring to that figure must be addressed to "The Publisher of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C." and the figure must be distinctly endorsed upon the envelope. Letters will then be forwarded to their proper destination. A price is counted as one word, as e.g., £1 10s. 6d.

DEPOSIT OF MONEY.—In order to ensure safety we offer the following system:—The purchaser of anything advertised in the Exchange Column may remit the amount to us, accompanied by a commission of 6d. if the amount is £5 or under; and 1s. if over that sum. We acknowledge receipt of deposit to both parties, and hold the money until we are satisfied that either the goods are returned to their original owner or the purchase completed.

Postal orders and cheques sent as deposit must be made payable to Edward Halse, and crossed "Martin & Co."

FOR DISPOSAL.

Drugs and Chemicals.

4 cwt. new garlic; 4L small lots. Mason, Bromsgrove.
8 oz. castor oil opt., 3 doz.; misc opt. pulv. 2 lbs.; what offer? 12s/11.
28 lbs. red precip., 7 lbs. bismuth carbonate, Howard's; cash offers. 8s/41.
10 lbs. pot. iodide opt., 10s. lb., carriage paid; 10 oz. otto rose virg., 21s. 6d. oz.; cash with order. J. N. Cutts, Chemist, Morecambe.
.2 lbs. iodine, 11s. lb.; 7 lbs. gnm opii opt., 9s. 3d. lb.; 22 lbs. cream tartar, 10d. lb.; 7 lbs. pulv. cubes gen., 4s. 9d. lb.; 4 lbs. pulv. cantharid. Russ. 4s. 3d. lb.; 2 lbs. pulv. opii opt., 11s. lb. J. C., Lingdale, Skelton.

Literature.

Hurt & Barbour's "Manual of Gynaecology," new, 10s. 20/20.
Twelve years' *Chemist and Druggist*, 1872 to 1883, nearly all complete, good condition; 142 monthly numbers; what offers? Mann, Hampton, Middlesex.
Several years' *Chemist and Druggist*, with Diaries; 5 vols. *Pharm. Journal*, 1858-62, bound, lot unbound; "Progress Pharmacy," Redwood; "Year-Book Pharmacy," 9 vols., 1874-1832; Wittstein's "Chemistry"; Hogg's "Microscope"; 30s. Stanley, Southwell.
What offers? 23 vols. *Pharmaceutical Journal*, in fair condition, bound in half leather, from vol. 1 to 23 complete, from 1843, formerly belonging to a well-known pharmacist; also *Chemist and Druggist* unbound, 1877, '79, '80, '82, '83, '84, '85, '83, '87, '83, and up to date, all complete, excepting 2 or 3 years, a few short. Address M. Richards, Clifton Villa, 37 Waddon Road, Croydon.

Formulae.

Reliable recipes, 6d. each; full set of 130 neatly copied in book, 7s. 6d.; send for list. "Chemist," Edwards, Wye, Kent.
The most practical recipe for Dutch drops, ingredients cheap; recipe 2s. 6d. Owen, Chemist, Carnarvon. A chemist writes:—"Thanks, satisfied; I find Dutch drops always has a steady sale."
Why sell profitless patents? Make your own proprietaries, paying half profit and increasing customers. Send 1s. 6d. for any three recipes as under:—"Glycerine Cream," for chapped hands, rough skin, &c.; "Quinine and Iron Tonic," best made, pleasant, permanent; "White Oils," warranted equal to any, cost easy; "Tannen Gargle," very efficacious and pleasant; "Bronchelixir," concentrated tincture, cures influenzæ and chest affections. Samples 4d. each, free; also list of 400. Tom Brooks, Chemist, Hornsey, N.

12

Optical.

What offers for spectacles, invoice price 21. 10s., with optimeter? Never been unpacked. 8/39.

About 8 doz. Lawrence's spectacles, retail from 1s. to 5s. 6d., 60 per cent. discount, or would exchange. Green, Ladenham.

Proprietary Articles.

Eight doz. aqua litosa S. Marco; 60 bottles Vichy Celestius, Harrop, Middleton, Lancs.

Two doz. Dobson's black leg drinks, 3s. size at 9s. doz.; 1 doz. 5s. 6d. size at 16s. doz. Herington, Leighton Buzzard.

Four 2s. 6d. hippoeca; 1 2s. 9d. Holloway's pills; 1 4s. 6d. Holloway's ointment; 12s. 6d. seidlitz chauveau; exchange pigeons; anything. Bayley, Chemist, Aston, Birmingham.

Two 3s. fer Bravais, 3 2s. 6d. Benger's liquor pancreaticus, 2 1s. 1 1/2d. Smith's pectorine, 1 1s. 1 1/2d. eclectic, 3 1s. 6d. Dun's phosphor capsules, 2 2s. 9d. Epps' Cura-cena, 1 2s. 6d. Clarke's constitution bitters, half marked price. Steal, Chemist, Heckmonwike.

Shop Fittings.

2 gold-lettered tablets for window, 8 1/2 x 12 in., and frosted glass; cheap. Mason, Bromsgrove.

The entire fittings of handsome pharmacy, solid mahogany, swan carboys, recess bottles, &c.; almost new. Apply, Barry & Phillips, Ealing, W.

Drawers, several nests, very cheap; also counter and wall cases, dispensing screens, counters, bottles, jars, carboys, and sundry fittings; great bargains. Philip Josephs, 54 Old Street, Goswell Road, London, E.C.

Glass bottles, job lines.—About 50 gross 3-oz. pale green wide-mouth rounds, 4s. 6d. per gross; 4 gross 6-oz. screw nickel-capped pomades, 16s.; 1 gross 16-oz. ditto, 30s.; 4 gross 2-oz. tinted vials, 3s. 9d.; 3 gross 1-pint (reputed) green syrups, 7s.; 4 gross 1-pint ditto, 10s.; 2 gross 1-pint ditto, 15s.; 1 gross 1-oz. green kalis, burst off, 3s.; 1 gross 6-oz. flat sauces, stoppered, 10s.; 10 gross 3-oz. opal screw nickel-capped pomades, 20s.; 5 gross 1 1/2-oz. ditto, 12s.; 5 gross 1/2-pint white syrups, 12s.; 3 gross 1-pint ditto, 20s.; 1 gross 6-drachm lavenders, 5s.; 4 gross 1/2-oz. oval essences, 4s.; 3 gross 2-oz. white globe-necked panels, 7s. Hearn, 381 Kingsland Road, London.

Miscellaneous.

What offers for one 10s. share in Half Price Letter Co.? Apply, Exor. W. Slack, Chemist, Doncaster.

Splendid 1/plate camera, including all appendages, nearly new, 25s., or exchange. Routly, Eastbourne.

What offers—nasal écraseur (Maw's, new); wir sponge cage; half-doz. Gostling's Shepherd's Friend? Wootton, Luton.

New shelving, good counters, carboys, shop-rounds, ointment pots, tooth forceps. Carter, Chemist, Woolwich.

Petroleum jelly, best quality; a few 6-lb. tins 7s. 6d. per tio, carriage paid. R. Whitchurch, 43 Prince's Square, Kennington.

Bargain.—Lemon and orange oils, by-products from the fresh peels; capital perfumes for hair oils, pomades, &c.; 4s. per gallon. Hay, Chemist, Hull.

What cash offers for new compressed tabloid machine, cost 10s. 6d. Maw's, 1 2s. 6d. Birff's boroglyceride, and 2 urinometers, in cases? Apply, Richard Esam, 13 St. Stephen's Roa, Leicester.

Bent-glass counter cases, one as Maw's A 17, 3 ft. 6 in. long, 3ft.; one as A 14, 3 ft. long, 30s.; plate electrical machine, in fitful case, diameter of plate 18 in., requires slight repairs, 30s., or offer; old violin, supposed Klotz, powerful tone, 5s., worth double; modern violin, oil varnish, sweet tone, suit lady, 30s. "Chemist," Chase Side, Enfield.

Second-hand carboys, specie jars, shop rounds, ointment jars; show cases for counters, walls, sponges, tooth-brushes, centre of shops, &c.; also desk and case dispensing screens, mirrors, glass shelves and window fittings, scales, &c., &c.; several nests of drawers, with glass knobs and labels; also contents of an entire shop, including drugs, stock, valuable fittings, outside lamp, and uten ils, to an immediate purchaser before removal Natali & Co., 184 Aldersgate Street, London (nearly opposite Maw's).

WANTED.

Freeman's chlorodyne, 2s. 9d. 85/2.

State lowest price iodine and quinæ sulph. 83/12.

Few Barclay's ordinary and preference; state lowest price. 83/13.

Buy surplus stock of patents; send list and lowest prices. 84/40.

Petroleum (racking) pump; please say lowest price. 19 Moseley Rd., Birmingham.

Shop fittings, all descriptions, purchased for cash. Natali, 184 Aldersgate Street, E.C.

Muter's "Analysis," Aveling's "Botanical Tables," last editions. Mason, Chemist, South Fulham.

Shop rounds, oil second-hand, 2 doz. each 20 oz. W. and N. mouth, cheap. Glover, Chemist, Waterloo Street, Hull.

JOHNSON & JOHNSON

NEW YORK and LONDON,
MANUFACTURING CHEMISTS,

MANUFACTURERS OF ALL VARIETIES OF

MEDICINAL AND SURGICAL PLASTERS IN RUBBER COMBINATION

(PERFORATED AND PLAIN), AND ISINGLASS AND MUSTARD PLASTERS.

ALSO MOIST ANTISEPTIC DRESSINGS & ABSORBENTS.

IMPROVED BELLADONA PLASTER.

Increased action by the addition of Boracic Acid and a mild rubefacient, by which the activity of the cutaneous glands is stimulated, and their power of absorption increased.

We have succeeded in greatly increasing the therapeutic value of Belladonna and other Plasters.

FIRST.—By preparing the mass in a manner calculated to promote a more rapid absorption of the incorporated drug.

SECOND.—By employing (in Belladonna Plaster) a more reliable extract of the drug than is commonly used.

The attention of manufacturers of Medicated Plasters has hitherto been directed chiefly toward perfecting the mechanical excellence of their preparations, overlooking, to a certain extent, the real end and aim for which Plasters are made.

The extent to which counter-irritants, solvents, detergents, &c., can be utilised in Plasters to produce a mechano chemical alteration of the epidermis, thus rendering the skin more absorptive, has been largely if not entirely overlooked.

By the addition of Boracic Acid and a mild rubefacient to the regular Belladonna Plaster formula, several important advantages are secured. The fatty matter in the pores is dissolved by the deteritive action of the former, and the glands are expanded and stimulated by the counter-irritative action of the latter, by which means not only is a larger proportion of the medicinal element of the Plaster absorbed, but the therapeutic effect is both increased and more rapidly obtained.



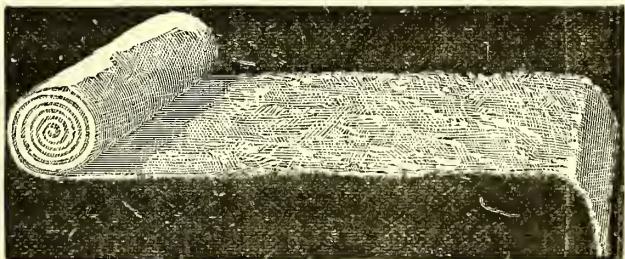
ANTISEPTIC TABLETS.

The increasing demand for antiseptic agents in a convenient form has induced us to prepare Corrosive Sublimate Tablets after the following formula :

Corrosive Sublimate, gr. 7, 3.
Ammonium Chlor., gr. 7, 7.

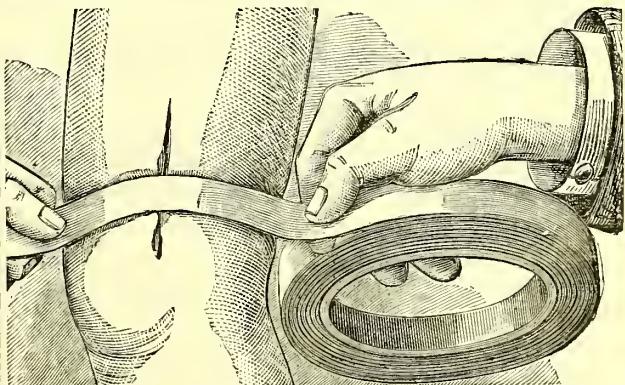
The ammonium chloride is used to make the solution permanent so that the corrosive sublimate will not be precipitated by the organic matter usually contained in water. Each Tablet contains the requisite amount of corrosive sublimate to make a solution of 1-1,000 when added to a pint of water.

ABSORBENT COTTON IN EVEN SHEETS
Rolled with Tissue Paper between them to prevent felting.



Cotton in this form is as easily applicable as an ordinary cloth bandage.
Its advantages can be seen at a glance.
Supplied in all sized Packets from 1 oz. to 1 pound.

RUBBER ADHESIVE PLASTER on HOLLOW CYLINDERS.



Pronounced by Surgeons to be the most convenient form ever devised for adhesive plaster. Besides its convenience it is much cheaper than rubber adhesive plaster on spools. It is put up in width varying from $\frac{1}{2}$ an inch to 3 inches, 5 yards long, in neatly decorated tin boxes.

Our goods are supplied by all the leading Wholesale Houses in Great Britain and Ireland, also by our
SOLE WHOLESALE AGENTS, H. C. MASON & CO., 1 & 2 AUSTRALIAN AVENUE, LONDON, E.C.

who will be glad to forward Lists and terms on application.

(When ordering through the Wholesale Houses care should be taken to specify the goods of JOHNSON & JOHNSON'S Manufacture.



ROBINSON'S LIEBIG'S BEEF WINE.

Composed of Liebig's Extract of Beef, Extract of Malt,
and sound Port Wine.

REPORT ON BEEF WINES.

From the results of my Analyses of various Beef Wines I have had occasion to examine, none have equalled as regards strength, purity of ingredients, and (of no less importance) the skilful and judicious manner in which the respective ingredients have been proportioned and combined, the Liebig's Beef Wine manufactured by Mr. B. ROBINSON, of Pendleton, Manchester.

It is in every sense a reliable preparation, embodying in a pleasing and palatable form all the acknowledged medicinal and nutritive properties pertaining to Liebig's Extract of Meat, Extract of Malt, and sound Port Wine.

WILLIAM ELBORNE, F.C.S., F.L.S.,

Lecturer on Materia Medica in the Owens College, Manchester (Victoria University).
December 15, 1882.

ROBINSON'S ORANGE WINE.

skillfully prepared for Quinine Wine, does not deposit, will keep good in any climate, and well adapted for Export Trade. Supplied in Cask containing 9, 18, 30, 60, or 120 Gallons. Terms on application. [2]

PHARMACEUTICAL SHERRY WINE.

This Wine is well adapted for Pharmaceutical Preparations, and is the strength ordered by the B.P. Price, in 6-Gallon Casks, 5/6 per gallon; in 2-Gallon Jars, 6/- per gallon, carriage paid. Casks charged 7/6, Jars 2/6, and allowed if returned. Cash or satisfactory reference to accompany order. B. ROBINSON, Distiller and Brewer of British Wines, Church St., Pendleton, Manchester.

THE KAISER'S COCOA.

MEAT. PEPTONE. COCOA.

This Preparation of Cocoa and Peptonised Meat Extract forms one of the most powerful concentrated foods known; it is indispensable to invalids, a boon to the healthy, and to those of a weak digestion. From its richness in nitrogenous principles (21 per cent.), it contains all the elements of tissue, muscle, and blood formation, in a form ready to be assimilated at once, being predigested. In Powder for Breakfast, &c., or in Tablets.

As taken by the late EMPEROR FREDERICK on the recommendation of Dr. Leyden.

PERFECT FLAVOUR. NO OBJECTIONABLE TASTE. EASILY DIGESTED.

Price 1s. 6d. per Tin. "The article is in every way of satisfactory quality."—British Medical Journal. Price 1s. 6d. per Tin.

Sole Agents—SCHEIBLER BROS. & CO., 23 New Broad St., E.C.

WILKINSON'S COMPRESSED

Best Hops compressed into small parcels of one pound and half-pound, and sent out in cases containing 30 lbs. each. These hops are specially selected and compressed for keeping purposes, and will retain their aromatic strength for a considerable time.

ENGLISH HOPS.

A. WILKINSON & SONS, 37 CANNING PLACE, LIVERPOOL.

P.S.—Chemists will naturally see the great advantage in making their own Bitters from the Pure Hop itself. Dealers in every description of Isinglass.

BY SPECIAL
APPOINTMENT TO
H.R.H. THE DUKE OF
ROYAL



CONNAUGHT AND THE
FAMILY.

BOURNE WATERS.

THE PUREST IN ENGLAND.

R. M. MILLS & CO., BOURNE, LINCOLNSHIRE,
MANUFACTURERS OF
SODA, POTASH, LITHIA, AND SELTZER WATERS,
LEMONADE, AND AROMATIC GINGER ALE.
4-dozen and 6-dozen Cases Carriage Paid.

Special attention is invited to our manufacture of

LITHIA WATER.

Each Bottle contains an average dose of Carbonate of Lithia—the recognised Specific for Gout.

THE LATEST SPECIALITY—the Celebrated Artesian Bourne Water in Pints and Quarts for Table Use.

Prices and Pamphlet on application

Agents appointed.

Messrs. INGRAM & ROYLE, 52 Farringdon Street, Wholesale Agents for the sale of our Waters.

CHEMISTS' TEA AGENCY.

WALKER & DALRYMPLE'S

BROKEN-LEAF TEA, 1s. 8d. per lb.

A MONEY SAVING TEA. ABSOLUTELY PURE.

The small leaf from some of the finest India and China Teas. Produced in the cup, stronger, richer, and cheaper than most whole-leaf Teas. Agents appointed, where unrepresented, throughout the United Kingdom.

WALKER & DALRYMPLE'S

INTERMEDIATE TEA, 2s. per lb.

BEST at the PRICE EVER SOLD. Great strength and a most useful Tea where there is a large consumption. Recommended to all who wish to SAVE in their Tea. Agents appointed, where unrepresented, throughout the United Kingdom.

WALKER & DALRYMPLE'S TEAS.—

AGENTS APPOINTED, where unrepresented, throughout the United Kingdom.

Prospectus and Samples Free on Application.

Warehouses, 154, 155, 159 and 160 WHITECHAPEL ROAD, and
2, 4, 6, 8, 10, 11, and 12 BRADY STREET, LONDON.
P.O.O. payable at head office. Bankers, the National Provincial Bank of England.

INDEX TO ADVERTISEMENTS.

TELEPHONE, NO. 7522

TELEGRAPHIC ADDRESS—"IDRIS KENTISH TOWN."

IDRIS & CO.

The Largest Syphon Fillers in the United Kingdom.

SODA. Brilliant, Pungent, and Sparkling.

POTASH. Prepared according to the British Pharmacopœia.

SELTZER. Pure and Delicious Table Water.

LITHIA of guaranteed strength.

LEMONADE. Pure fruity flavour of ripe Lemons.

PURITY. Water filtered by a special process, by which absolute purity is guaranteed. Distilled water used as required. Pure Chemicals only employed. All Goods are regularly subjected to strict analysis.

ELEGANT SYPHONS. Best Block Tin or Silver-plated Tops. IDRIS & Co. make their own Syphons, and can therefore guarantee freedom from deleterious metal.

LOWEST PRICES for Water, both in Syphons and Bottles. Write for Price List.

PROMPT DELIVERY by our Vans in London and Suburbs. Customers called on regularly once or twice a week. Country orders despatched same day as received.

IDRIS & CO. now supply a larger number of the London Hospitals, Public Institutions, and Chemists, than any other Manufacturers, which is in itself a sufficient guarantee of the excellence and purity of the Waters supplied by them.

"I have examined the Mineral Waters prepared by IDRIS & CO., and find that in regard to Chemical purity and brilliancy, they are unsurpassable."

JAMES EDMUNDS, M.D., M.R.C.P. Lond., &c.

Medical Officer of Health and Public Analyst to St. James's, London.

IDRIS & COMPANY,
KENTISH TOWN, LONDON, N.W.

THE DIAMOND MARK.

To secure the best Hungarian Aperient Water

DEMAND THE DIAMOND MARK,And insist upon receiving the HUNGARIAN APERIENT WATER sold by the APOLLINARIS COMPANY (LIMITED), LONDON.
OF ALL DRUGGISTS AND MINERAL WATER DEALERS.**FAVARGER'S SYPHONS**

ARE THE

BEST IN THE MARKET.HEADS PURE TIN,
AND
GUARANTEED FREE
FROM LEAD.GLASS,
FINEST
ANNEALED.**READ**

the following:

"Edinburgh

"We beg to say that we have used your
"Syphons for many years, and are very well
"pleased with them. We have tried other makers
"but always found yours superior. We think your
"Syphons the best of any we have seen.

"We are, yours truly, H. C. BAILDON & SON."

"Bournemouth.

"We cannot, we think, do better than tell you that of the Syphon
"supplied us by you, and used by us during three successive seasons, we have no
"had one out of order—if we except two with broken tubes; and only one burst,
"and that on first time of filling. The Plating is, we consider, of special excellence
"and wears well. We shall not need to look farther whilst you continue to supply us with what
"we consider the best value in the market.—Yours truly, J. M. DOWDEN & CO."

PRICES, FULL PARTICULARS, AND TESTIMONIALS, APPLY TO

FAVARGER & CO., 76 TURNMILL STREET, E.C., LONDON**JOHN OWEN, JUNIOR,**

PACKING CASE MANUFACTORY AND STEAM SAW MILLS.

ESTABLISHED 1840.

37 & 38 MINORIES, LONDON, E.C.

MANUFACTURER OF
Cases of every description for Home use
and Exportation.

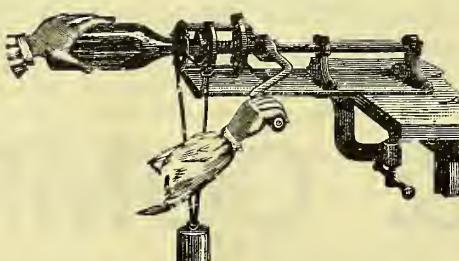
Wine Laths, Oak and Deal.
Mineral Water Bin Cases and Trays.
Bottle Crates. Straw Envelopes.
Cases Lined with Tin, Zinc, Copper, &c.;
"Acme" Incubator & Poultry Appliances.



EXPORT ORDERS RECEIVE SPECIAL ATTENTION.

NEW CAPSULING MACHINE

The only Machine
which leaves no crease
or pleat on the
Capsule.



Can be fixed to any
Counter.
A single pull of the lever
is sufficient
to fix the Capsule.

Patentee—C. MELIN, 37 Crutched Friars, LONDON, E.C.



SYPHONS & SELTZOGENES

GREAT REDUCTION IN PRICE.

We have recently been entrusted with a most important Agency for the above-named goods. Our Principals are the best known firm in Paris, and the Syphons are undoubtedly the cheapest and strongest in the market. The tops are made of pure English Tin, guaranteed free from lead. The Seltzogenes are made on the well-known "Fevre" system, and each one is thoroughly tested before being sent out.

WE CAN GIVE TO LARGE AND SMALL BUYERS EXCEPTIONALLY LOW PRICES.
PLEASE WRITE US AT ONCE FOR PRICES, STATING QUANTITY OF EACH KIND REQUIRED

SODA-WATER MACHINERY.

MELBOURNE EXHIBITION, 1889, UNPRECEDENTED SUCCESS.

We have obtained at the above Exhibition

3 HIGHEST AWARDS POSSIBLE

A feat never accomplished before by any other house supplying requirements for the Aërated Water Trade.

These awards will carry with them **THREE GOLD MEDALS**, which were awarded as follows:—

1st—SODA-WATER MACHINERY (Highest Award possible).

1st—ESSENTIAL OILS & FRUIT ESSENCES (Highest Award possible).

1st—PATENT AND ORDINARY BOTTLES (Highest Award possible).

WRITE FOR NEW ILLUSTRATED CATALOGUE, POST FREE.

BRATBY & HINCHLIFFE, LIM.

Aerated Water Engineers and Glass Bottle Manufacturers,

SANDFORD ST., ANCOATS, MANCHESTER,

And at 146 MINORIES, LONDON. E.C.

TO AERATED WATER MANUFACTURERS

HAY'S SOLUBLE ESSENCES

REGISTERED

ARE GUARANTEED TO BE THE FINEST IN THE MARKET

Honourable Mention: International Food Exhibition, Agricultural Hall, London, Oct., 1880. Gold Medal: Soc. of Arts, Paris, 1880.

HAY'S SOLUBLE ESSENCE OF JAMAICA GINGER,

A Pure Essence of the Finest Ginger.

Trade Price 5/- per lb.; 12 lbs. and upwards, 4/-.

HAY'S FORTIFIED ESSENCE OF JAMAICA GINGER.

For First Quality Ginger Ale.

Trade Price 5/- per lb.; 12 lbs. and upwards, 5/-.

HAY'S GINGER ALE EXTRACT,

For Second Quality Ginger Ale.

Imparts Pungency, Colouring, great Brilliance, and an unusually Fine Ginger Flavour and Aroma.

Trade Price 4/- per lb.; 12 lbs. and upwards, 4/-.

HAY'S GINGER ALE ESSENCE,

For Third Quality Ginger Ale.

This Essence makes a beverage that is unsurpassed by the so-called finest Best Ginger Ale.

Trade Price 9/- per lb.; 12 lbs. and upwards, 8/-.

THESE ESSENCES
Have obtained the Highest Testimonials from all the Medical Journals, and from the Principal Trade Journals in this and other countries.

TRADE MARK



REGISTERED
FOR ORANGE VINTAGE & ALL OTHER ESSENCES,
SEND FOR PRICE LIST.

HAY'S HOP ALE ESSENCE,
For the manufacture of the Finest Aerated Hop Ale. This Essence is made from the choicest Hops grown, and is unrivalled for its peculiarly fine Hop Flavour and Aroma. Hop Ale made from this Essence has the full flavour of the finest Hops, and is a really appealing Beer Peer.

Trade Price 8/- per lb.; 12 lbs. and upwards, 8/-.

HAY'S SOLUBLE ESSENCE OF MESSINA LEMONS.

No. 1. Highly Concentrated.

Trade Price 8/- per lb.; 2 lbs. and upwards, 8/-.

HAY'S SOLUBLE ESSENCE OF MESSINA LEMONS.

No. 2. Makes an exquisitely fine Lemonade.

Trade Price 6/- per lb.; 12 lbs. and upwards, 6/-.

HAY'S LEMON FLAVOUR.

Imparts a Lemonade all the Fine Aroma and Flavour of the choicest Lemons.

Trade Price 5/- per lb.; 12 lbs. and upwards, 5/-.

MANUFACTURING
CHEMIST
BEVERLEY ROAD

JEWSBURY & BROWN'S

(MANCHESTER)

SPARKLING TABLE WATERS,

UNRIVALLED FOR PURITY AND QUALITY.

SODA WATER.

LEMONADE.

SELTZER WATER.

GINGER ALE.

POTASH WATER.

QUININE TONIC.

LITHIA WATER.

GINGER BEER.

SIMPLE

HOREHOUND BEER

AERATED WATER.



EXTRACTS FROM ANALYTICAL REPORTS.

"The examination of the Waters which I have seen has satisfied me that they have been prepared with the greatest care, and are of excellent quality."

FRANCIS JONES, F.R.S.E., F.C.S.

"On the whole, I have no hesitation in stating that your Aerated Waters are of the highest standard of purity which is practically attainable."

LOUIS SIEBOLD, F.I.C., F.C.S.

J. & B.'s Syphons are mounted with PURE BLOCK TIN, thus ensuring absolute immunity from dangerous metallic contamination, CARRIAGE PAID AND ON RETURNS.

"The Lemonade is, for flavour and general excellence, superior to any similar compound which I have examined, and contains no acid but Citric Acid."

"I took a sample of the water used in your manufacture, in the preparation of the Aerated Waters, and found it, as was the case with the completed compounds entirely free from lead, copper, or any injurious matter whatever."

C. ESTOURT, F.C.S., F.C.I.

113 MARKET STREET, and 44 DOWNING STREET, MANCHESTER.

A Copy of this Supplement is inserted in every number issued of "The Chemist & Druggist."

The Chemist and Druggist

SUPPLEMENT

Businesses Wanted.
Businesses for Disposal.
Premises to Let.
Auction Sales.

SATURDAY, SEPT. 14, 1889.

Partnerships.
Situations Vacant.
Situations Wanted.
Miscellaneous.

CHEMISTS' TRANSFERS.

MESSRS. ORRIDGE & CO., 32 LUDGATE HILL, E.C.

CHEMISTS' TRANSFER AGENTS,

May be consulted at their Offices on matters of SALE, PURCHASE, and VALUATION.

The business conducted by Messrs. Orridge & Co. has been known as a Transfer Agency since the year 1846, and is well known to all the leading firms in the Trade. VENDORS have the advantage of obtaining an opinion on value derived from extensive experience, and are in most cases enabled to avoid an infinity of trouble by making a selection from a list of applicants for purchase, with the view of submitting confidential particulars to those alone who are most likely to possess business qualifications and adequate means for investment. PURCHASERS who desire early information regarding eligible opportunities for entering business will greatly facilitate their object by describing clearly the class of connection they wish to obtain.

1.—LONDON, E.C.—Retail and Dispensing Business, with Wine Agency, situated in a thickly populated locality; returns £1,450; large shop (corner), well fitted and heavily stocked; about £800 required; reasonable offer entertained; part by instalments if wished.

2.—LONDON, E.—Death vacancy; good-class Dispensing and Prescribing Business; returns under manager £795; business can be much increased; well-fitted shop and good stock; any reasonable offer will be accepted.

3.—LONDON, N.—Good residential neighbourhood; select Dispensing and Retail; returns £650 yearly; well-fitted shop; good stock; large and convenient house; vendor, retiring from business, will give 12 months' introduction; reasonable terms can be arranged; full particulars on application.

4.—LONDON, CITY.—Central position, large thoroughfare; very profitable Dispensing and Retail Business; returns £900; handsomely-fitted shop; good stock; about one year's returns required; profits are above the average.

5.—CATHEDRAL CITY, WEST.—First-class Dispensing and Retail Business; held by vendor upwards of 16 years; receipts average nearly £1,150; net profit nearly £600; large handsome corner shop, convenient house; full particulars on receipt of wholesale reference.

6.—BUCKS.—Good family Business; returns about £700 yearly; well-fitted shop, good stock, large house, greenhouse, stable and coachhouse, &c.; immediate sale required; price £450; offer considered.

Gentlemen prepared to invest about £3,000 are invited to apply to Messrs. Orridge & Co., regarding several Country Businesses, Wholesale and Retail combined.

Particulars of any of the above will be furnished on application.

N.B.—NO CHARGE TO PURCHASERS.

Other Businesses, Town and Country; particulars free on application. Personal applicants receive Messrs. O. & Co.'s direct attention and advice, where required, free.

TERMS FOR VALUATION ON APPLICATION. APPOINTMENTS BY POST OR WIRE HAVE IMMEDIATE ATTENTION.

Messrs. Orridge & Co. invite communications from COLONIAL and FOREIGN firms where business of a confidential nature requires the especial attention of a London agent.

SPECIAL NOTICE.—TO PRINCIPALS AND ASSISTANTS.

MESSRS. ORRIDGE & CO. Register Vacancies for Situations FREE OF CHARGE.

ORRIDGE & CO., 32 Ludgate Hill, LONDON, E.C.

SALE BY AUCTION.

LINCOLNSHIRE.—To be SOLD BY AUCTION, by Mr. W. Hemsley, of Tunbridge Wells, at the "White Hart," Spilsby, on Monday, the 23rd day of September, at 3 o'clock in the afternoon precisely, the valuable LEASEHOLD PROPERTY, consisting of Chemist's Shop (double-fronted, plate-glass), 3 sitting-rooms, 10 bedrooms, 2 kitchens, pantries and cellars and all conveniences, 10 warehouses and garden at back; the whole covering about 8,338 square feet; the above is situated in the best position of Market Square, opposite the Town Hall and Corn Exchange, and has been for over 50 years established as a Chemist's business. For further information apply to A. C. Farmer, Chemist, Southborough, near Tunbridge Wells.

TO LET.

SPLENDID corner double-fronted Shop to let in High Road, Leytonstone; suitable for Chemist. Apply, T. Watton, 31 Romford Road, Stratford.

SPLENDID Opportunity.—Small Shop to let, end of September (owing to expiration of lease); fine position, corner of 4 roads; good neighbourhood; now let to Chemist; average takings £4, could be much increased; rent, including rates and taxes, only £30. Apply, P. O., 76 Fountaine Road, Stoke Newington Common.

FOR SALE.

3s. 6d. for fifty words; 6d. for every 10 words beyond.

FOR SALE, the entire second-hand fittings of a Chemist's shop, including mahogany drawers, bottles, &c., for £35; particulars on application. 10 ft. range mahogany drawers and shelving, £5. Also nest mahogany drawers, 5 ft. by 4 ft., 45s.; ditto, 4 ft. 8 in., with shelving, 46 drawers, 75s.; 12 ft. range new mahogany drawers, glass labels and knobs, 190s.; sloping plate-glass case, 36 in. by 18 in., 27s. 6d.; counter, with mahogany top and drawers, 7 ft. long, second-hand, 30s.; 4 second-hand specie jars, 15s. each; bent-front brush case, 25s.; desk and glass case, 55s. 120 new gold-labelled bottles and jars, 19s.; 7 ft. 6 in. mahogany dispensing screen, mirror and marble slab in centre, 27s.; 2 7-ft. mahogany-top counters, with drawers, 30s. each; 5 2-gall. carboys, 5s. 6d. each; 4 4-gall. ditto, 10s. each; 4 6 gall. ditto, 12s. each; 1 10-gall. ditto, 20s. R. Tomlinson & Sons, Medical Fitters, Bond Street, Birmingham.

APPRENTICESHIP.

WANTED an educated, gentlemanly youth as Apprentice; one willing to work well taken for nominal premium, £10; also an Experienced Assistant wanting time for study. E. White, Kingsmead Square, Bath. Letters not answered within 3 days declined.

PARSON C. BAKER,

8 Stockbridge Terrace, Victoria Station, S.W.,
CHEMISTS' VALUER AND TRANSFER AGENT.

WITHIN A SHORT DISTANCE OF LONDON.—A capital chance of making a large Business in town of over 10,000 (only three Druggists); now doing £450; good house; very low rent; price £275.

IN DULWICH.—A gentleman, retiring (from ill-health), wishes to sell a newly-fitted Pharmacy, doing increasing trade, on very reasonable terms; about £200 required.

IN THE SAME DISTRICT.—A nice Business, with Post Office; easily worked and lucrative; good house and garden; price £450, or reasonable offer.

IN THE SAME DISTRICT.—A much-neglected Business; low rent; small investment only required, and splendid chance of increase.

IN NORTH LONDON.—An increasing trade in fast growing neighbourhood, on profitable terms; about £100 required.

LARGE TOWN (YORKSHIRE).—A neglected Business, now improving under new manager; price, valuation, under £200; low rent; now doing about £6 to £7 weekly; will easily do £10 when properly attended to.

F. J. BRETT, VALUER, LEICESTER,

60 St. Stephen's Road.

References to principal London and Provincial Wholesale Houses, also to numerous clients throughout the United Kingdom.

BUSINESSES THOROUGHLY INVESTIGATED FOR BUYERS. 20 YEARS' EXPERIENCE

SOMERSET.—Light Country Retail, Dispensing, and Prescribing; no oils or heavy trade; good house, garden; returns over £900; price £700.

DERBYSHIRE.—Light Retail; returns £300, large proportion own specialities, which have an increasing sale; price £250, less than value of stock and fixtures.

LINCOLNSHIRE.—Returns £1,200; excellent Country Retail; in good market town; easy distance of seaside; excellent house and premises; price about £300, or small premium and valuation of stock and fixtures.

NORTHERN TOWN.—Trade exceptionally good; General Retail with wines and spirits; returns £1,450; valuation about £900, part of which can remain.

CORNWALL.—Retail in seaside resort; returns £450, increasing; easy agency, nearly pays rent and taxes; price £250.

BERKS.—Country Retail in pretty town; returns £400; fine scope for doing an agricultural trade; price about £300.

BUSINESSES FOR DISPOSAL.

3s. 6d. for fifty words; 6d. for every 10 words beyond.

TO be sold, in a large manufacturing town in Lancashire, an old-established Business of a Chemist and Druggist; owing to the sudden illness of the present proprietor immediate possession can be given. Apply "Obemist," 56 Market Place, Wigan.

TO be sold immediately, for removal by purchaser, or as a going concern the entire Stock and Fixtures of a small Chemist's shop, in excellent condition, only in use 2½ years. Apply to "Statim" (personally if possible), 44 Seven Sisters' Road, Holloway, N.

IN main road, good situation; under management; net profits £2 10s. per week; to be sold for little more than half value of stock and fixtures; there is a fine field for building up a large trade. Apply to X, 30 Malmesbury Road, Hornsey Rise, N.

TO be disposed of, an old Drug and Dentist's Business, in a good neighbourhood near Regent's Park; it has been neglected, and requires a competent man to work it up; terms moderate. Address, Westgate, 1 Charles Street, St. John's Wood, N.W.

LONDON (West End).—Old-established Chemist's Business; price, including goodwill, stock-in-trade, valuable shop fittings, &c., to an immediate purchaser, £150 (stock and fixtures worth double). Apply at once to Natali & Co., 184 Aldersgate Street, London.

SURREY.—Good-class Retail, Dispensing, and Prescribing Business, in centre of town 20 miles from Waterloo; returns £500, at full prices; low rent; comfortable house; illness cause of sale; price £300; fullest investigation allowed. J. H. O., Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

FOR disposal, about 12 miles N.W. from London, a profitable ready-money Business, in healthy growing neighbourhood; capable of great increase; good house, with small garden; rent £35; cash required between £250 and £300. Apply, by letter only, R. D., care of Messrs. Brodie & Co., 1 Canfield Gardens, Hampstead, N.W.

UNUSUAL opportunity for early succession to the only Chemist's Business in a seaside town; over 2,000 inhabitants; increasing returns, soon reach £500, with other advantageous prospects; first reasonable offer accepted; satisfactory cause for selling. "Radix," care of Evans, Gadd & Co., 97 Fore Street, Exeter.

DENTAL Practice, old-established, in one of the largest manufacturing towns in Yorkshire; average returns for last 8 years £350; 10-roomed house; rent £22; declining health cause of retiring; no reasonable cash offer refused; every information given. George Duncan, 19 Gloucester Terrace, Leonard Street, Hull.

SYDNEY GREENWOOD, A.A.I.

Associate of the Incorporated Institute of Auctioneers,
TRANSFER AGENT, VALUER, AND ACCOUNTANT,
PITTVILLE HOUSE, Lea Bridge Rd, CLAPTON, N.E.

HANTS, seaside.—Returns £500; low rent; profitable Prescribing trade; selling through infirmity; price £400 (a bargain).

BERKS.—Genteel locality; returns £430; rent £45; good-class Dispensing and Prescribing; full prices; nice house; £315 to purchase.

LINCS.—Returns £500, formerly £900; rent £50; price £250. Another, returns £1,000; low rent; profitable Family trade; price £800.

WORCESTER.—Returns £740; rent £28; good house and garden; net profits £20; well-fitted shop; price £450.

NOTTS.—Handsome fitted; doing good turnover; moderate rent; important position; price £800 (value of plant); worth seeing.

KENT.—Returns £600; rent £40; old-established; large well-fitted shop, and convenient house; price £550 (photo on application).

ISLINGTON, N. (near Angel).—Returns over £700 by manager; elegantly fitted, and well stocked; large house; rent only £75; on lease; price £450 (a bargain); see this before deciding elsewhere.

LONDON, E.C.—Returns £1,500; rent £120; valuable lease, 21 years; well-fitted spacious premises; only £1,000; cash £600.

LONDON, S.E.—Returns £500; rent £40; Post Office pays £50; net profits over £250, business increasing; price £450.

LONDON, N.—Returns £300 (by Minor); low rent, on lease; marketing position, main road; has done £600, neglected; price £170 (all at).

Particulars of 2,000 other Businesses on application as above.

BUSINESSES FOR DISPOSAL—Continued.

£310 CASH—In market town: splendid chance for beginner; now doing £400, has been £70; good house; excellent business premises; genuine opportunity for working up an agricultural trade; many villages round. "Beta," Messrs. Evans, Lescher & Webb, 60 Bartholomew Close, London.

YORKSHIRE.—A small genuine light Retail, in good position, lately established; rent remarkably low, with long lease; shop nicely fitted and well stocked; sole reason for disposal owner commencing medical studies; agents need not apply. Address, "City," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

£350.—Monmouthshire Iron and Coal district; established 30 years; proprietor retiring; genuine Prescribing, Dispensing, and General Retail Business; ready-money; full prices; shop large and convenient, nicely-fitted and well-stocked; rent £26. Apply, "Iron" Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

READING (within 10 miles of).—A Retail Dispensing and Prescribing Business, returning £780, net profit £250; same hands many years; selling through family matters; good house, walled-in garden, stocked with fruit trees; price £450, or first reasonable offer to effect a speedy sale. "Ipecac," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

A N exceptional chance occurs to acquire a splendidly-fitted and well-stocked London Pharmacy, with Post Office, yielding nearly £300 net profit; £200 immediate cash will buy house, fixtures, stock, and good will; rent £50 only, being interest on ground-rent, which post office alone nearly pays. Address "Drug 7814," Sell's Advertising Office, London.

A DVERTISER is desirous of finding an immediate customer for his genuine Light Retail and Dispensing Business; shop (in best position of rapidly increasing town) is both well fitted and stocked; cash trade; good profits; full prices; an hour's ride from London; rent low; returns £500. Address, "Verax," care of Messrs. Meggeson & Co., Miles Lane, London, E.C.

OLD-ESTABLISHED Business; shop double fronted, well fitted and stocked, in centre of large village in Midlands; unopposed; population over 3,000; dentistry more than covers rent; house, large garden; lease; rent £18; returns about £300, large profits; price £280. Apply by letter, "Fides," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

A SMALL old-established lucrative Business, in a busy main thoroughfare of a favourite suburb, 7 miles from London, returning under management about £7 cash weekly; proprietor has done over £10, but cannot now attend to it; well fitted and stocked shop; convenient 6-roomed house and garden; rent £35; long lease. "Chemist," Messrs. Meggeson, 14 Miles Lane, Upper Thames Street, E.C.

LONDON SUBURB.—Near the Crystal Palace, good-class Retail and Dispensing, with good opening for Dentistry; returns last year £440; well fitted double-fronted shop and good stock, with good house attached, contains seven rooms; rent low; vendor, being anxious for an early sale, will accept £225. Apply, "Aurant," 121 Tottenham Road Southgate Road, London, N.

PROPRIETOR wishes to meet with gentleman having moderate capital (qualification unnecessary) to join him in converting very old-established Chemist's Business into Stores; no opposition for 20 miles; population 8,000; large markets and surroundings; suitable premises; exceptional opening for this profitable class of investment. "Statim," 1 Bradford Street, Shrewsbury

BUSINESSES WANTED.

3s. 6d. for fifty words; 6d. for every 10 words beyond.

WANTED, a good Retail and Dispensing Business, returns about £1,000 or upwards, good town in South of England or healthy suburb of London. Address W. H., 160 Stockwell Road, S.W.

WANTED to purchase, a small and genuine Business; part cash, remainder by instalments. Address, "Chemist," 26 Cullum Street, Fenchurch Street, E.C.

A GENUINE Retail and Dispensing Business, in Southern half of England; price from £800 to £1,200; cash ready; no agent need reply; must stand strict investigation. Address, C. Brooks, 27 Burgass Road, Carlton Road, Nottingham.

A SMALL genuine Business, capable of enlargement, in a market town or attractive locality; Devonshire preferred; investigation required; no agents. Address full particulars to "Druggist," 19 South Street, South Molton, Devon.

WANTED, for cash, a genuine reliable Business, in either good London suburb or country town (Midlands or South), returning £700 to £1,000 yearly. Please send full particulars (in confidence) to N. S., Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

WANTED, to purchase a Chemist's Business at seaside, either facing or near the sea; must be a fair house; a small business capable of extension would be entertained; advertiser is prepared to invest £500 for a suitable concern. Address, "Statim," Messrs. Hearon & Co., 5 Coleman Street, London, E.C.

WANTED at once, a Retail, Dispensing and Prescribing Business, in or within easy distance of London, W.; with a good house, and net profit of about £350 yearly; or a smaller business with scope for increase would be entertained; references given and required. F. J. Tranter, Chemist, New Swindon, Wilts.

SITUATIONS OPEN.

3s. 6d. for fifty words; 6d. for every 10 words beyond.

W HOLESALe.—Experienced Assistant wanted. Apply, Lorimer & Co., Britannia Row, Islington.

A JUNIOR or Improver at once, for Dispensing and General Business. Send photo with usual particulars to J. J. Treemer, Chemist, Barnstaple.

WANTED, at once, a good Junior Assistant able to take charge; good appearance; comfortable home, and time for study if wished. W. Dawson, Slough.

A Assistant to Manage a Branch; able to extract teeth; Mixed trade; indoors. Apply, with photo and stating particulars, to John Snowdon, Chemist, Walmsley, York.

J UNIOR Assistant; one who has just completed his apprenticeship preferred. Apply, stating age, height, salary required, and enclosing carte, "Chemicus," 20 Walcot Parade, Bath.

WANTED for a large London Store a good Assistant for the Front Counter. State age, height, experience, and wages required to "Drugs," care of Messrs. Street & Co., 30 Cornhill, E.C.

M R. PAYNE, Oxford Buildings, Shaftesbury Square, Belfast, requires the assistance of a Junior, one with Minor qualification preferred. Apply, giving references, and state salary expected. Outdoors.

A N Improver, or Turnover Apprentice wanted, in a good brisk Agricultural, Dispensing, and General Retail Business; state salary required (outdoors), and references to "Chemicus," 16 Bedford Circus, Exeter.

A Manager for Branch; must have Minor qualification, be thoroughly competent, and accustomed to first-class Dispensing and Retail. Particulars, with photo, to "Spa," care of Carlton & Sons, Horncastle.

WANTED, at once, Improver or Junior (indoors), for a few months, in select mixed seaside business. Apply, with all usual particulars, including reference, to A. E. Wood, The Pharmacy, Southbourne-on-Sea, Hants.

I MEDIATELY, a Junior Assistant for good-class Family Retail and Dispensing Business; state age, height, salary required indoors, and enclose carte (to be returned), with reference. Apply to Poole & Son, Chemists, Newcastle, Staffordshire.

INVOICE Clerk wanted; must have a thorough knowledge of the Drug trade (no others need apply) and be a good and quick writer. Address, stating age, salary required, and last employ, to "Radix," care of Messrs. Street & Co., 30 Cornhill, E.C.

WANTED, at once, steady, trustworthy, and reliable Assistant, or good Junior or Improver, for Mixed Country business with brisk counter trade; must be willing and obliging and not afraid of work. Full particulars to S. Smith, New Swindon.

P ATENT Medicine and Perfumery Department.—Wanted a first-class man in the above department; good salary. Apply by letter marked "Patent Medicines," or personally, to Home and Colonial Stores, 268 and 270 Edgware Road, London, W.

A QUALIFIED Married Man, who would accept free rental of four rooms, in return for a little daily help and care of premises; pleasantly situated in London suburb. Address, "Mutual," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

WANTED, competent Assistant; qualified for quick, pushing trade; one who can put some capital in the business; full particulars on application; please enclose photo, references, and state usual particulars. Drug Company, Limited, 10 Tontine Square, Hanley.

CHEMISTS.—Wanted, a first-class man to take a leading position in a Patent Medicine, Perfumery, and Chemists' Sundries department; good salary. Apply by letter, marked "Chemist," or personally, to Home and Colonial Stores, 268 and 270 Edgware Road, London, W.

FOR an old-established Dispensing Business, W., a Qualified Assistant to manage in the absence of the Principal; this is an excellent opportunity for one wishing to succeed to the same at a future date. Full particulars to "Lex," 54 Sterndale Road, Brook Green, W.

J UNIOR Assistant wanted (indoors), not under 20 years of age, for light country business; time allowed for study; must be able to prescribe and dispense. Apply, with reference (enclosing carte), stating age, salary required, &c., to W. Jacobs, Medical Hall, Guildford, Surrey.

WANTED, end of September, an Indoor Assistant, between 20 and 30 years of age; must be able to prescribe and extract teeth; time for study. Apply, with references (and photo, to be returned), stating salary and full particulars, to W. Aspinall, Chemist, 109 Scholes, Wigan.

A N Energetic Assistant for a pushing Retail and Prescribing Business; accustomed to a brisk middle-class trade; must be of good reliable character, and able to furnish good reference; state salary required, &c., with rooms on premises, no board. Cartwright, 69 Leytonstone Road, Stratford, E.

J UNIOR or Improver; hours 8 to 8; Thursdays 4; Saturdays 10.30; no Sunday duties; tooth extractor preferred, but not necessary; comfortable home. State salary, age, height, reference, photo if convenient, to W. Wilkerson, Victoria Buildings and Church Street, Rushden, Northamptonshire.

I MEDIATELY, energetic, trustworthy Assistant for East London business (indoors); hours 8 A.M. to 10.30 P.M.; half-day per week allowed; salary £30, and comfortable home. Send full particulars, and if possible photo, to Price & Co., 32 East Street, Barking, Essex. Also an Apprentice wanted.

WANTED, for a General Country and Agricultural trade, a competent Assistant (outdoors); must be a good dispenser and counterman, and able to put up preparations; references unquestionable. Apply, stating age, height, and salary required, to William J. Bray, Chemist and Druggist, High Street, Romford.

WANTED, a qualified Assistant, between 25 and 30; energetic salesman, safe Dispenser and Prescriber, take entire management; indoors; moderate salary commencing; one desiring permanency; hours 8 to 9; no Sunday duty; Thursday half-holiday. Reply, stating salary and references, A. B. Frost, Beeston, Notts.

CHEMISTS' Assistant (age 26 to 28) required for India; must have passed Minor examination; 3 or 4 years' agreement; terms 150 Rs., 200 Rs., 225 Rs., and 250 Rs. per month for the 1st, 2nd, 3rd, and 4th years respectively; lodging provided, but not board or servants; passage out paid. Apply, stating qualifications and references, to J. B. E. S., Deacon's Advertising Offices, Leadenhall Street, E.C.

P ART-TIME Engagement.—Wanted, permanently, a Gentleman of good experience, to assist on market days, and take sole charge for a few hours two or three days weekly, in Mixed Business, in very healthy and pleasantly situated country town of about 2,000 inhabitants, in Yorkshire; good pay to a really suitable man; age no object; abstainer preferred; house rent and living very moderate. Apply to P. Q., care of Messrs. Bleasdale & Co., York.

SITUATIONS WANTED.

1s. for twelve words; 6d. for every six words beyond.

P ART-TIME in London; Surgeon or Chemist. "Student," 80 Normanton Road, Derby.

R EGISTERED Chemist, middle aged; locum-tenens or part time; surgeon or chemist. T. Morris, 51 St. Paul Street, Islington.

WANTED, situation with view to Partnership or succession; aged 22; outdoors preferred; Minor. Wright, 38 Cannick Road, Lincoln.

F EW hours daily, as Dispenser; thoroughly experienced; good references; disengaged 16th instant. H. G., 2 Upper Street, Islington, N.

W HOLESALe.—Manager, Warehouseman, or responsible position; 20 years' general experience. W. L., 18 Gertrude Terrace, Downsell Road, Leyton, F.

S TUDENT requires evening employment in London; could give alternate Sundays. "Carolus," care of Mr. Palmer, Chemist, Wingham, Kent.

A S Assistant or Manager to a Chemist; married; thorough knowledge of the Dental profession. Address, "Dentist," care of Mrs. Shelvey, High Street, Minster, Thanet.

A SSISTANT (22); qualified; 5 ft. 6 in.; good references; disengaged beginning of October; India or the Colonies preferred. Rogers, Rossendale House, Ramsey, Isle of Man.

ENERGETIC Assistant; unqualified; 20 years' mixed experience; good references; aged 36; single; abstainer; disengaged October 5th. "Chemicus," Mr. Wain, Ripley, Derby.

L OCUM-TENENS; in Yorkshire; week or month; 8 years' experience; General, Mixed Retail, Dispensing, Prescribing; 7 years in Wholesale. "Chemicus," 2 Albert Villas, Boulevard, Hull.

AS Junior; 4½ years' experience; aged 19. Long, Southgate, Chichester.

MANAGER or Assistant (outdoors); aged 28. H. Allen, High Street, Abingdon.

QUALIFIED; good London experience; aged 23. "Minor," 45 Court Hill Road, Lewisham.

AS Improver (18); 3 years' experience; good references. "Chemicus," 181 Margate Street, Dover.

PART TIME: "Square" Student; good references. Particulars to E. F. Ellis, Topsham, Devon.

ASSISTANT; experienced Dispenser, Prescriber, Extractor; aged 23. Marcus Sparway, Colwyn Bay.

JUNIOR; outdoors; London preferred; 3½ years' experience; aged 19. H. F. G., 19 High Street, Bradford.

TEMPORARY; outdoors; branch; Minor; 31; tall; experienced. F., 113 Riversdale Road, Highbury, N.

TEMPORARY or Permanent; qualified and registered. "Dentist," 73 Shakespeare Road, South Hornsey.

TEMPORARY, during absence; long experience; gentlemanly address; qualified. P., 39 Powis Square, W.

ASSISTANT or Branch Manager; Nottingham preferred; aged 29. T. W. L., 13 Queen's Walk, Nottingham.

ASSISTANT or Manager; 15 years' experience; Prescribe and Extract. 48 Cotswood Street, Liverpool.

ASSISTANT (2); tall; prescribe and extract; disengaged. H., 39 Crown Terrace, Richmond, Surrey.

MANAGER or Senior; disengaged early October; good references. "Qualified," Medical Hall, Llandudno.

ASSISTANT; 5 years' experience; aged 23; town preferred. "Chemist," Morfa Bach, Kidwelly, S. Wales.

ASSISTANT; mixed business; 8 years' reference last place; outdoors; aged 32. P., 5 Flitney Cottages, Portland Road, Nottingham.

ASSISTANT or Manager Branch; aged 31; single; unqualified; indoors and permanency preferred. Lumbus, Aston, Nantwich.

DISPENSER to Surgeon or Chemist; part time, desiring evenings for lectures; experienced; aged 25. "Chemist," 41 Third Avenue, W.

ASSISTANT or Manager; aged 23; single; thoroughly experienced; 3 years' reference; temporary or permanency. "Chemist," Bedlington.

ASSISTANT or Dispenser; 10 years' experience; aged 23; undeniably references; disengaged. "Fidels," 50 Richmond Road, Shepherd's Bush, W.

MR. S. SMITH, 6 Shaftesbury Terrace, Ashley Road, Bristol, takes Confidential Management during absence or illness, or Branch; varied experience; disengaged for October.

AS Improver, in a first class dispensing business; London preferred; indoors; 4½ years' experience; passed Prelim.; little or no salary first three months. "Statim," 9 Carlton Terrace, Halifax.

MEDICAL.—Wanted, by a gentleman of mature age, experienced, an outdoor Appointment to visit, dispense, and keep books; character and reference. "Medicus," 54 Sefton Street, Southport.

ASSISTANT or Branch Manager; outdoors; 15 years' varied experience in Dispensing, Prescribing, and Tooth Extraction; aged 35; satisfactory references. "Statim," 73 Broad Lane, Rochdale.

AS Senior or Manager; aged 27; height 5 ft. 11 in.; Minor; thoroughly experienced in good-class Retail, and well up in Dispensing and Prescribing. "Senior," 34 St. Thomas Street, Weymouth.

AS Branch Manager or Assistant; aged 27; good dispenser, prescriber, and teeth extractor; married; excellent reference. "Chemicus," care of Mr. John Woodbridge, High Street, Smethwick, Staffordshire.

ASSISTANT or Manager; Minor; aged 23½; 9 years' experience; outdoors; extract, prescribe, experienced dispenser; salary 35s. per week; excellent testimonials. "Chemist," 25 Windmill Lane, Nottingham.

MANAGER; aged 34; qualified; experienced Surgeon-Dentist; steady and industrious; married (no family). State salary and all particulars to "Radix," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

LOCUM-TENENS.—Registered Chemist, good experience, appearance, and address, will be glad to communicate with gentlemen desirous of taking holiday; any part; now disengaged. "Scilla," Mr. Freeman, Long Stanton, Cambs.

ADVERTISER will give few hours at evening, Dispensing or other work, for board and lodging whilst attending lectures in daytime; excellent references. Marshall, 14 Earnest Street, Grange Road, Bermondsey, S.E.

TO Pill Makers and Wholesale House.—Situation wanted by young man of past experience in pill making and coating, with good character. Apply, by letter, to A. B. C., 2 Eversholt Street, Oakley Square, London.

MINERAL Water Trade.—Wanted, situation as working Foreman; thoroughly experienced; well up in syrup, bottling, and machinery; aged 47; 3 years and 4 months in last situation. "Working Foreman," Laburnum Street, Wollaston, Stourbridge.

AYOUNG Scotchman wishes situation abroad; Minor; aged 24 years; height 5 feet 6 inches; thoroughly experienced in details; abstainer and non-smoker; disengaged in October; excellent references; long engagement not objected to. "Perseverantia," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

MISCELLANEOUS.

Special charges are made for Advertisements under this heading, which can be obtained on application.

WANTED, cheapest offers of Silico Fluoride of Sodium, for several hundred tons a year. Address to B. O., care of the Advertising Agency of G. L. Daube & Co., Frankfort-on-Main.

SIGR. GIOVANNI HAMNETT has authorised Messrs. Seager, White & Co., of 85 Gracechurch Street, E.C., to continue the Agency, lately carried on by Mr. Jas. M. Seager, for the sale of his well-known brand of Essence of Lemon.

BEAD AND BOARD.—A Chemist (bachelor) has more rooms than he can use, and would like to hear of two students who want comfortable diggings near most of the Hospitals and Colleges. Further particulars of R. W., 52 New Kent Road, S.E.

FORTUNE'S KNOCK.—Minor recently looked out some places suitable for starting a Chemist's business, but, being deprived unexpectedly of capital, cannot start; would send names of selected localities on receipt of a £5 note. Letters only to "Dialysis," care of Mr. Vause 137 Sloane Street, London.

STUDENTS' AIDS TO EXAMINATION.

PRELIMINARY.—Arithmetic and Metric System, 1s. How to Write an Essay, 3d. Caesar Simplified, 1s. Knotty Points in Latin Grammar, 1s. 6d. MINOR.—Equations Simplified, 1s. Illegible Autographic Prescriptions, 1s. Notes on Dispensing, 1s. Prescriptions given at the Minor, 6d "Chemist," care of Mr. J. Edwards, Wye, Kent.

PRELIMINARY AND MINOR.

ALL Students who are preparing should send for particulars of a method of study which will enable them to pass with ease. Enclose stamped envelope to Mr. J. Tully (Hills Prizeman), Chemist, Hastings. Established 1872. References to past and present Pupils. 32 Pupils passed the last Examinations.

RECENTLY PUBLISHED, third edition, 8vo., cloth 2s. 6d., "Practical Chemistry," Part I.: Qualitative Exercises and Analytical Tables for Students, by J. Campbell-Brown D.Sc. (Lond.), Professor of Chemistry, Victoria University and University College, Liverpool. J. & A. Churchill, London; F. & E. Gibbons (late Holden), 19 Ranelagh Street, Liverpool.

£290.—100 5l. shares (3l. paid) in Henry Lamplough (Limited), proprietors of Pyretic Saline, business established 1707, to be sold for above sum. Company has paid four dividends of 10 per cent. per annum. Carried forward to next account, 4,000l., sufficient to pay a dividend of 20 per cent. Letters, T., care of Macdonald, 6 King William Street, E.C.

CIRCULATION OF PRICE-LISTS.—Any firm issuing catalogues, samples, &c., to reach every Chemist and Druggist in Kelly's new Directory, may save half the cost of postage by communicating with "Specialty," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

TO IMPORTERS AND CONSUMERS.

TALC (French Chalk); Plumbago, natural and refined; Blacklead, Barytes, finest ground and rough; Ochre, yellow and red, ground and rough; Umber, Brilliantine (finest polish powder), from our mines and refining works, by

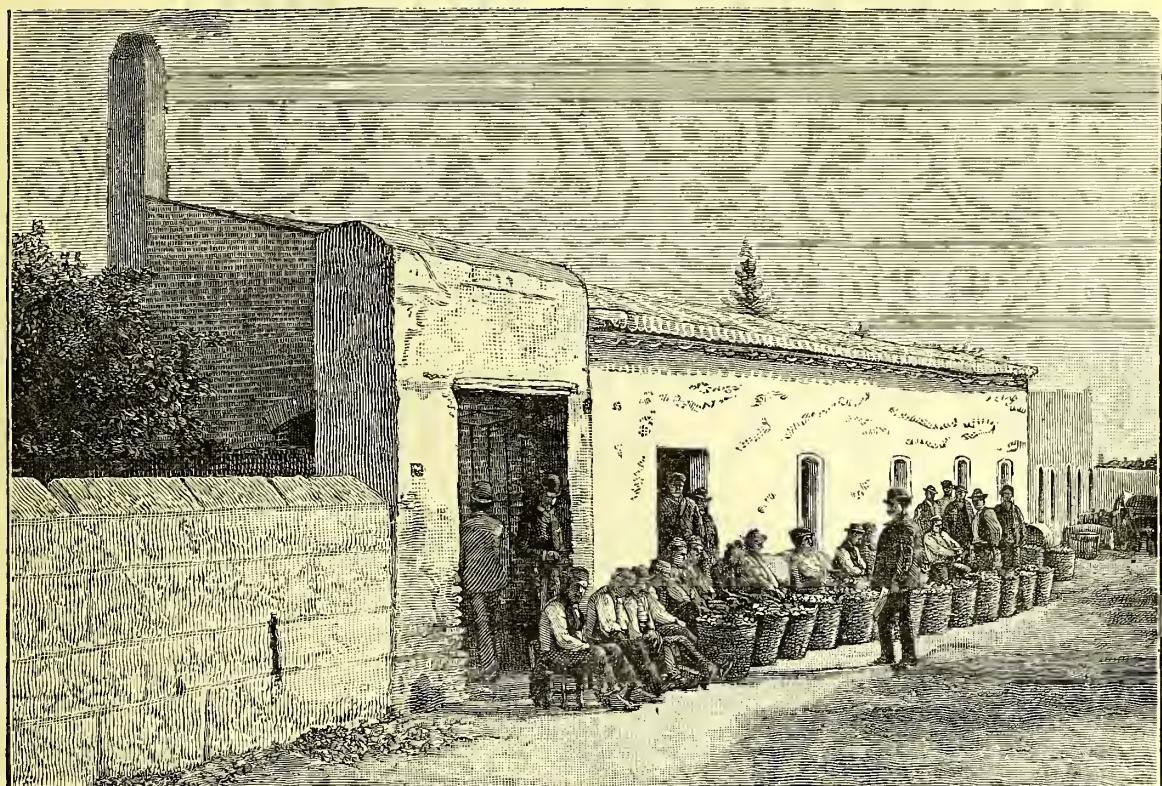
BERTHOLD & KASPAR, Dresden.

Offers and samples on demand, personally, by Mr. O. Berthold, who is at present in England.

GLYCERINE & CUCUMBER,

First Quality, 9d. per lb., by using Rouse's Concentrated Cucumber Paste. In Jars (free), ½ lb. 2s. 3d.; 1 lb. 4s. 3d. net. Making 3 lbs. and 6 lbs., costing 4d. per oz., by simply adding Water and Glycerine.

Thro' any Wholesale House, or post free for P.O. PHARMACEUTICAL CHEMISTS, ROUSE & CO., 12 WIGMORE ST., LONDON, W.



**W. J. BUSH & CO.'S
ESSENCE OF LEMON FACTORY**

Strada Antico, Cimitero, Messina.

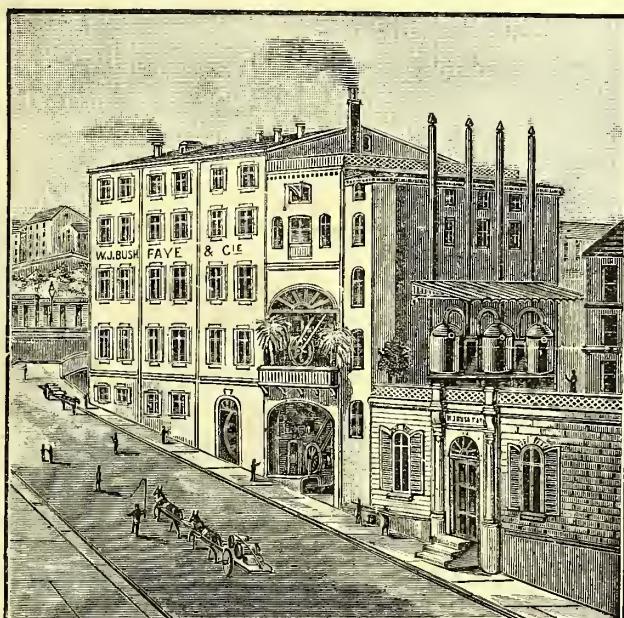
Also Proprietors
OF

Potter & Moore

Peppermint Growers
and Distillers,

MITCHAM.

ESTABLISHED 1749.



Also Proprietors
OF

Potter & Moore

Peppermint Growers
and Distillers,

MITCHAM.

ESTABLISHED 1749.

W. J. BUSH, FAYE & CIE.

Distillers of Oils, Lavender, Thyme, Rosemary, and other French Essences,
GRASSE, ALPES MARITIMES, FRANCE.

[1]

"PREMIER BRAND" ESSENTIAL OILS.

Concentrated Fruit Essences—Soluble

MANUFACTURED BY

JOHN CUMMOCK

Who has received Hundreds of Unsolicited Testimonials, also THREE GOLD MEDALS, besides other Honours.

Chemists manufacturing their own Aërated Drinks should write for Prices and Samples of the following:—

ESSENCE "SPARKLING LIMETTA"—Soluble "Essence of Lemon"

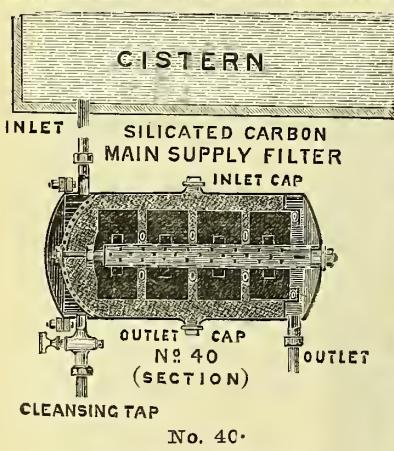
ESSENCE "LEMON SQUASH"—Essence for Sherbet

ESSENCE "TONIC HEADING"—Essence for Ginger Ale

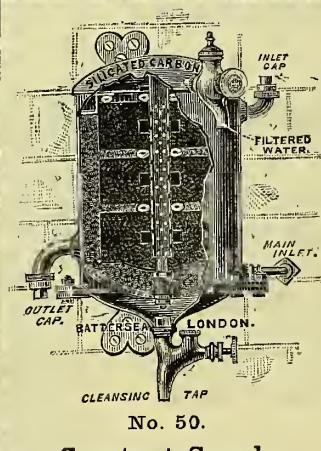
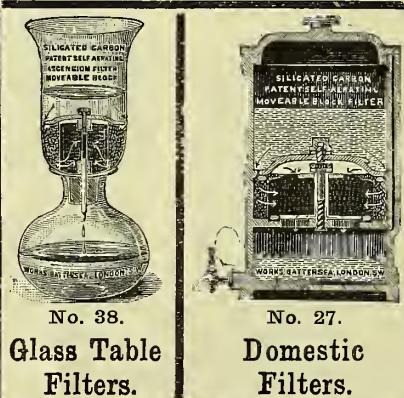
AND COMPARE WITH OTHER MAKERS.

Manufactory & Offices: 45 ROPE WORK LANE, GLASGOW.
LATE 32 MAIN STREET.

SILICATED CARBON PATENT SELF-AERATING MOVABLE BLOCK FILTERS.



By the use of these Filters, which are of everyday sale, the Flatness of Taste so common in Filtered water is entirely Obviated.



WRITE FOR FULL ILLUSTRATED PRICE LISTS AND TERMS TO THE

SILICATED CARBON FILTER CO., BATTERSEA, LONDON, S.W.

MERCHANTS, SHIPPERS & AGENTS

INDENTORS SHOULD SPECIFY OUR
MANUFACTURE.

INDENTORS SHOULD SPECIFY OUR
MANUFACTURE.

**Soluble & Fruit Essences,
ESSENTIAL OILS, COLOURS,**
And all requisites for the AERATED WATER TRADE
DUCKWORTH & CO.
AND
102, FENCHURCH ST.
Manufacturing Chemists
LONDON. Corporation St. MANCHESTER.^{ENG.}

Our Preparations are SPECIALLY Manufactured to meet
the Requirements of the EXPORT TRADE.

TOWER TEA

A MOST VALUABLE AGENCY.

REGISTERED.



Tower Tea

NOTE. These Trade Marks appear
on every Package.

WHERE VACANCIES MAY EXIST, AGENTS ARE APPOINTED BY

**THE GREAT TOWER STREET TEA COMPANY, LIMITED,
5 JEWRY STREET, LONDON, E.C.**

EIGHT PRIZE MEDALS AWARDED

GOODALL'S HOUSEHOLD SPECIALITIES.

YORKSHIRE RELISH.

Most Delicious Sauce in the World. Bottles, 6d., 1s., and 2s. each

GOODALL'S BAKING POWDER.

The Best in the World. 1d. Packets; 6d., 1s., 2s., and 5s. Tins.

GOODALL'S EGG POWDER.

One 6d. Tin is equal to 25 eggs. In 1d. Packets; 6d., 1s., and 5s. Tins.

GOODALL'S CUSTARD POWDER.

Delicious Custards without Eggs. In Boxes, 2d., 6d., and 1s. each

GOODALL'S BLANCMANGE POWDER

Delicious Blanmange in a Few Minutes. Boxes, 6d. and 1s. each.

GOODALL'S QUININE WINE, B.P.

Best Tonic yet Introduced. Bottles, 6d., 1s. and 2s. each.

GOODALL'S GINGER-BEER POWDER.

Makes the Best Ginger-Beer. Packets, 3d. and 6d.

GOODALL'S BRUNSWICK BLACK.

For Painting Stoves, Grates, Iron, Tin, &c. 6d. and 1s. Bottles

GOODALL'S LAVENDER WATER.

A Rich and Lasting Perfume. Bottles, 1s., 2s., and 5s. each

GOODALL'S PLATE POWDER.

For Polishing and Cleaning all Metals. Boxes, 6d., 1s. and

GOODALL'S JELLY SQUARES.

Make a Delicious and Nutritious Jelly. In $\frac{1}{4}$ - and 1-pint boxes, 3d. and 6d. each.

PROPRIETORS—GOODALL, BACKHOUSE & CO., LEEDS.

PATENT MEDICINES AND DRUGGISTS' SUNDRIES.

Monthly Price List of Patent Medicines, Druggists' Sundries, &c., will be sent post free on application to

GOODALL, BACKHOUSE & CO., LEEDS.

"CYMRY AM BYTH."



REGISTERED.

ELLIS'S RUTHIN WATERS.

ASK FOR ELLIS'S.

CAUTION.—Corks branded "R. ELLIS & SON, RUTHIN." Every Label is Registered, and bears Name and Trade Mark (Goat on Shield).

SOLE ADDRESS—R. ELLIS & SON, RUTHIN,
NORTH WALES.

London Agents: W. BEST & SONS, Henrietta Street, Cavendish Square

ANDREWS' FILTERS

No. 1, 12/6. FOR THICK LIQUIDS.

Used Extensively by Manufacturing Chemists and Druggists.

Sent Carriage Paid on receipt of Postal Order or Cheque for 12/6 or 18/6.

FILTERING CLOTHS OF EVERY DESCRIPTION.

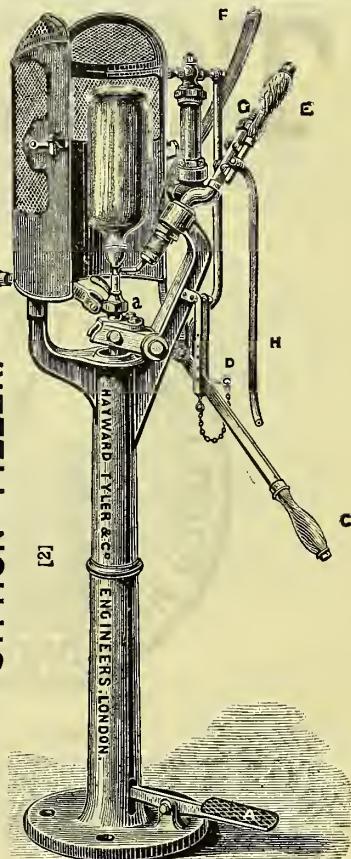
ANDREWS'
FILTER CLOTH CO.,
330 High Holborn,
LONDON, W.C.

No. 2, 18/6.



HAYWARD TYLER & CO.
84, 85 WHITECROSS STREET, LONDON, E.C.

IMPROVED PATENT
SYPHON FILLER.
[2]



A WONDERFUL SUCCESS!!

NON-INTOXICATING BEER

Made from MASON'S Original

EXTRACT of HERBS

(REGISTERED.)

Composed of Yarrow, Dandelion, Comfrey, & Horehound.
ENLARGEMENT OF SIZE.

A Sixpenny Bottle makes EIGHT GALLONS of
HERB OR BOTANIC BEER

A NON-INTOXICATING BEVERAGE

Full of Body and Flavour, with a Creamy Head like Bottled Ale, the most perfect substitute for Alcoholic Drinks ever discovered, for either Summer or Winter.

BEWARE of mean and fraudulent imitations.

BEWARE of others copying our title.

MASON'S is the original and only genuine.

MASON'S is a Special Compound entirely from Herbs.

NO OTHER EXTRACT MAKES BEER LIKE IT.

Sold in Bottles at 6d., 1/., & 2/ each, with directions.

MASON'S WINE ESSENCES

Make Temperance Wines in a few minutes.

Ginger, Orange, Lemon, Raspberry, Black Currant, &c.
These are having a very large sale now, and are extensively advertised.
Sold in Bottles at 6d., 1s., and 2s. each.

Quotations on application.

SOLE INVENTORS &
MANUFACTURERS: **NEWBALL & MASON,**
Manufacturing Chemists and Botanic Druggists, NOTTINGHAM



MADE INSTANTLY IN CUP OR TEAPOT.

A Digestive SANTHA Extract of Tea.

"The aroma and the caffeine are preserved, and the tannin is neutralised and rendered innocuous."—*Lancet*, May 4, 1889.

THE ONLY SAFE TEA FOR WEAK DIGESTION.
In bottles, price 1/- and 2/6; Samples 6d. each. Wholesale Agents—BARCLAY & SONS, Lim., Farringdon Street.
** A LARGE SALE MAY BE EFFECTED AMONGST DYSPEPTIC CUSTOMERS.

PERFUMERY AND TOILET SOAPS.

NEW PERFUMES:

ESSENCE MELILA	FLORES ANDINAS
KI-LOE DU JAPON	WHITE VIOLET
ROYAL THRIDACE SOAP.	VELOUTINE SOAP.

Besides all leading and staple odors.

The Violet Toilet Soaps, Perfumery, and Toilet Requisites are the leading brands throughout Europe. They are undoubtedly the finest and highest grade goods made.

MILLAR'S BRITISH WINES.

ORANGE (suitable for Quinine), GINGER, RAISIN, COWSLIP, CHERRY, &c.

A. MILLAR & CO., Thomas Street, DUBLIN.

Sole Agents for London and District—H. J. ROYDANT & CO., 75 Acre Lane, Brixton, S.W.

"RAMORNIE." LIEBIG'S Extract of Meat.

As supplied to the War and India Offices.

1-lb. Jars.....	6/2	per doz.	74/0	2-oz. Jars.....	per lb.	7/0	per doz.	10/6
½-lb. Jars.....	6/4	per doz.	88/0	1-oz. Jars.....	per lb.	7/8	per doz.	5/6
4-oz. Jars.....	6/7	per doz.	19/9	½-oz. Jars.....	per lb.	8/0	per doz.	3/0

QUOTATIONS FOR EXTRACT IN "BULK" ON APPLICATION.

Write for Detailed Price List to the Australian Messrs Co., 9 and 11 Fenchurch Avenue, E.C.

6 lbs. Carriage Free.

TYRER'S SAUCES AND "BOROUGH" KETCHUP

THE GIANT 1d. BOTTLE OF SAUCE.

LARGEST IN THE TRADE.
In Half-Gross Boxes, at 6/8 per Gross.

"BOROUGH" KETCHUP, WORCESTER, HARVEY, YORKSHIRE OR READING SAUCE.

1d. Sample Bottles, dozen parcels	—	—	per gross	5/- extra quality 8/-
1d. Giant Bottles, dozen parcels	—	—	"	5/6 "
½ gross boxes	—	—	"	6/- "
½ gross boxes	—	—	"	6/6/- "
½-Bottles (flat or round), reputed ½-pint	—	—	"	16/- "
½-Bottles (flat or round), reputed pint	—	—	"	26/- "
½-pint Imperial Round Stoppered Bottles	—	—	"	30/- "
½-pint Imperial	—	—	"	50/- "
12½-gallon Casks (casks free)...	—	—	each	20/- "

ROYAL CAFÉ SAUCE.

In 8-oz. square-stoppered bottles, 48/- per gross.
A rich, fruity Sauce of fine flavour, and worth especial attention, as being the most saleable in the market.

Samples of any kind Sent Free of all Cost by
PETER TYRER,
The "Borough" Ketchup and Sauce Maker,
70 LONG LANE, BOROUGH, LONDON, S.E.
SCOTCH AGENCY, WEST NILE STREET, GLASGOW.
Also Sold by W. & C. PANTIN, Upper Thames Street, LONDON, E.C.
BURGOYNE & CO., 16 Coleman Street, London, E.C.
JOS. TRAVERS & SONS, 119 Cannon Street, London, E.C.

DRUGGISTS' CONFECTIONERY.

ROBERT GIBSON & SONS,

Medicated Lozenge Manufacturers,
CARLTON WORKS, ERSKINE STREET, HULME, MANCHESTER,

1 Australian Avenue, London, and 44 Alter Wall, Hamburg.

GIBSON'S SUPERIOR

BOILED SUGARS

Have gained a High Reputation everywhere. **FOR EXPORT TRADE.** They are put up in 1-lb., 2-lb., and 5-lb. Bottles. Packed in Casks or in 1-doz. Cases as required, and delivered F.O.B. at any Port in England. These Sweets are absolutely pure. We specially recommend

Lime Fruit Tablets, Everton Toffy, Mixed Fruit Drops, Cough Drops, Raspberry Drops, Lemon Tablets.

CACHOU PEARLS,

Musk, Rose, Mint, and other Flavours. In 1-lb. White Glass Bottles. Bottles free

COMPRESSED CHLORATE OF POTASH PELLETS, SACCHARINE PELLETS,

And PELLETS of every description, put up in 1-lb. White Flint Glass Bottles, with Boxwood Top Corks. Bottles not Charged.

HIGH-CLASS LOZENGES

OF EVERY DESCRIPTION.

Chlorodyne Cough Lozenges, Chlorodyne Jujubes, Peppermint Lozenges,

In every variety of size and strength. Curiously Strong, and Multum in Parvo Mints give the utmost satisfaction
Medicated Lozenges of Pharmacopœia Strength.

DIGESTIVE TABLETS. VOICE AND THROAT LOZENGES for Singers and Public Speakers.

ORIGINAL SUGAR WORM CAKES

Have an immense sale, both at home and abroad; will keep in any climate, and give entire satisfaction. Put up in Tins containing 3 doz., 6 doz., and 12 doz. cakes.

THROAT HOSPITAL LOZENGES

(As per T. H. Pharmacopœia).

All Lozenges are sent out in 2-lb. and 4-lb. Bottles (bottles free), but allowed for if returned.

PROPRIETARY LOZENGES CAREFULLY PREPARED, STAMPED, AND CUT TO ANY SIZE OR SHAPE.

PRICE LISTS SENT ON APPLICATION.

E. C. RICH COMPANY, Limited, Agents, United States,
AND
Mr. THOS. LAKEMAN, 34 Pitt Street, Sydney, for Australia.

Telephone Number, 1852.

Telegraphic Address—CHEMUS LONDON.

ADVERTISERS' AND BUYERS' REFERENCE LIST AND INDEX TO ADVERTISEMENTS.

ADVERTISEMENTS APPEARING IN THIS ISSUE OF "THE CHEMIST AND DRUGGIST."

NOTE.—The Folios shown in this Index are those at the FOOT of the Page, and not at the Top. This arrangement is necessary in order to meet the requirements of the Post Office.

Foot of Page	Foot of Page	Foot of Page	Foot of Page
Aire & Calder Glass Bottle Co. 45	Day & Sons 50	Lalor, Dr. 40	Powell, E. A., & Co. 42
Albert's Grasshopper Ointment 55	Deneaeyer's Peptone Co. 10	Lang, Jules, & Co. 54	Price's Caudle Co. 57
Allen & Hanburys Front Cover	Dinuford's Magnesia 37	Leo & Co. 36	Pronk, Davis & Co. 51
Alofas, The, Co. 56	Duckworth & Co. 21	Leslie, J. & Co. 48	Quibell Bros. 56
Anderson & Adams 36	Dunn & Co. 34	Liebig Co. 27	Quilliam, J., & Co. 56
Andreae, Oscar, & Co. 36, 40	Dunn, W. G., & Co. 56	Lincoln and Midland Counties Drug Co. 37	Renshaw, H. 6
Andrew's Filter Cloth Co. 22	Durrant & Co 56	Liverpool School of Pharmacy, The 6	Robbins, J., & Co. 36
Anglo-American Oil Co. (Lim.) 49	Elliman, Sous & Co. Text 384	Lofthouse & Saltmer. 35	Robertson, J., & Co. 56
Apollinaris Co. 11 Outside Cover Text 384	Ellis & Son 22	London Homeopathic Hospital and Medical School 6	Robinson, B. 14
Annett, A. G. 43	Epps, J., & Co. 58	Lüneburger Wax Bleaching Works. 53	Sanford & Son. 56
Assistants Wanted Coloured Supplement	Evans, Lescher & Webb. 40	Lynch & Co. Cover	Sanitas, The, Co. (Lim.) Text 384
Australian Meat Co. 23	Evans, Sons & Co. 40	Mack, H. 54	Santa Tha Co. 23
Barnett & Foster Outside Cover	Evans & Sons (Lim.) 40	Macnair, J. & D., & Co. 56	Scheibler Bros. & Co. 14
Barron, Harvey's & Co. 34	Exchange Column 12	Manchester College of Chemistry. 6	School of Pharmacy. 6
Becker & Kirsten 38	Favarger & Co. 16	Mann, C. A., & Co. 4	Seabury & Johnson. 46
Becker, F. E., & Co. 55	Fennings, Alfred Outside Cover	Mather, W. 52	Self-opening Tin Box Co. 46
Beecham, T. 41	Ferguson, W. F. 57	Maw, S., Son & Thompson 55	Sequah (Lim.) 37
Beedzler, J., & Co. 43	Fink, F., & Co. 56	Mawson, Swan & Weddell 4	Shipkoff & Co. 54
Billault, M. 38	Fletcher Bros. & Co. 56	May & Baker. Cover	Shirley, A. W. 53
Blondeau & Co. 11	Fletcher, Fletcher & Stevenson Text 384	May, Roberts & Co. 33	Silicated Carbon Filter Co. 20. Text 384
Boehm, F. 36	French Hygienic Co. 28	McKesson & Robbins. 28	Silverlock, H. 7
Bovril (Lim.). 10	Gent & Co. Text 384	Melin, C. 16	Smith, T. & H., & Co. 36
Brathy & Hinchliffe 17	Gibson, R., & Sons 24	Millar, A. & Co. 23	Smith, T. J. 34
Brecknell, Turner & Sons 57	Goodall, Backhouse & Co. 22	Mills, R. M., & Co. 14	Southall Bros. & Barclay. 35
Brooks, T. 54	Goodall, E. F. 44	Moseley, D., & Sons. 53	Spratts Patent (Lim.) 51
Breffitts, E., & Co. 45	Great Tower Street Tea Co. 21	Mumford, G. S. Text 384	Stephen, Smith & Co. 48
Burroughs, Wellcome & Co. Front Cover 5, 29, 30, 57	Greeff, R. W., & Co. 41	Newball & Mason 23	Stern, G. & G. Text 384
Burroughs, James 48	Grindley & Co. 50	Noakes, B., & Co. Text 384	Stevenson & Howell. 3
Bush, W. J., & Co. 19	Hamilton & Co. 50	Oakey & Sons 48	Towle, A. P., & Son. 39
Businesses for Disposal Coloured Supplement	Harker, C. R., Stagg & Morgan 34	Oppenheimer Bros. & Co. 37	Towsend, J. 7
Cadburys Bro. Cover	Harris & Co. Text 384	Orridge & Co. 8	Tyler, Hayward, & Co. 22
Chassaing & Co. 31	Harris, P., & Co. 31	Coloured Supplement	Tyler, P. 23
Chesebrough Manufacturing Co. 30	Hay, W. 18	Owen, John, Jun. 16	Vaccine Association. 37
Chiswick Soap Co. Front Cover	Hickison, J. 31	Owens College 6	Violet. 23
Clarke, Samuel 47	Horn & Son 56	Pascall, J. 10	Walker & Dalrymple. 14
Colthurst & Harding 46	Howards & Sons 33	Peacock, M. & R. 9	Wedlake, M. 54
Cook, E., & Co. 57	Hungarian Aperient Water 16	Pearls' Soap 10	Wenham Co. (Lim.) 46
Critchley, T., & Co. 56	Hunt, W. F., & Co. 54	Petersen, P. J., & Co. 35	Werner & Pfleiderer. 44
Cumnock, J. 20	Idris & Co. 15	Peterson, M., & Co. 44	West, T. 54
Curtis & Co. 35	Isaacs, I., & Co. 44	Phillips, G., & Co. 48	Westminster College of Chemistry. 6
Cyclostyle, The, Co. 8	Jewsbury & Brown 18	Pontifex & Wood 44	Wilkinson & Sons 14
Dahl's Agency 44	Johns, W. 44	Poths, H., & Co. 31	Woolley, Sons & Co. 30
Dartou, F., & Co. 8	Johnson & Co. 56	Ywright, Layman & Umney Text 384	Wyleys & Co. 32
Day, Son & Hewitt. 51	Johnson & Johnson 13	Zimmermann, A. & M. 39	Zimmermann, A. & M. 39

CLASSIFIED LIST OF ALL ADVERTISERS

Whose Announcements appear in "THE CHEMIST AND DRUGGIST." Those whose Names do not appear above are published in one of the other issues of this month.

AERTD & MINRLS

Apolinaris (Hungarian Aperient Water, Diamond Mark, Friedrichshall Apollinaris)
Barnett and Foster
Catley Abbey Mineral Water
Chemists' Aerated Waters Association.
Ellis (Ruthin)
Hassall and Co. (Citric Acid Phospho)
Hay, W.
Idris and Co.
Jewsbury and Brown
Kinmonth and Co.
Mills and Co. (Bourne)
Schacht, W., & Co. (Kronenquelle)
Taylor, T. and F. J.
[See GINGER ALE.]

BITTO PLANT

[See SYPHONS and ESSENCEBS.]
Barnett and Foster
Brathy and Hinchliffe
Favarger, H.
Fevre,
Gueret Frères
Tyer, Hayward, and Co.

ACETIC ACID

Dunn and Co.
Green, R. W., and Co.
Morris and Callard (Salts)

ALKALOIDS

Howards and Sons (Cinchona)
Smith, T. and H.

AGNCIES ABROAD

Australian Drug Co.
Cooking and Co. (Japan)
Felton, Grimwade and Co. (Melbourne)
Fougner and Co. (New York)
Kempthorne, Prosser & Co. N.Z.
Lennon, B. G., and Co.
Levy, Jules
Macnaughtan, F. J.
Peake, Allen and Co.
Petersen, P. J., and Co.
Prosser, Taylor and Co.
Rich, E. C., Co.
Moor, Paris, &c.)
Rocke, Tempsitt and Co. (Melbourne)
Soul, W. H., and Co.

ALMANACKS

Townsend, J.

AMMONIA

May and Baker
White, A., and Sons
Woolley, Sons and Co.

APPARATUS

Becker, F. E., and Co. (Scientific)
Clarke, S. (Food Warmer and Bed Tray)
French Nickel Manufacturing Co.
McHugh, B. and E. (Lemon Squeezer)
Orme (Scientific)
Perken, Son and Raymond Stokes, J. R., and Co. (Lim.) (Cheek Till)
Wedgwood & Sons (Mortars)

BAKING POWDER

Dunn, W. G., and Co.
Goodall, Backhouse and Co.

BANDAGES

Bellier, W. H., and Son
Robinson and Sons
Schutze, F., and Co.
Seabury and Johnson

BATH GLOVES

Maw, Son and Thompson, S.
Pattison, G.

BEESWAX

Bowdlear, W. H., and Co.
Lüneburger Wax Bleaching Works

BICARB. SODA

Brunner, Mond and Co., Lim.
Gaskell, Deacon and Co.
Howards and Sons
May and Baker

BISMUTH. PREP.

Hearon, Squire and Francis Hewlett and Sons
Howards and Sons
May and Baker
Symes and Co.

BLOOD MIXTURE

Lincoln and Midland Counties Drug Co.

BOOKS

Dr. Dobell
Gurney and Jackson
Hargreaves, Dr.
Pritchett, W. E.
Whitla, W., M.D.

BOTANIC BEER

Newball and Mason

BOTTLES

Aire and Calder Bottling Co. (I.d.)
Bailey, M., and Co.
Barnett and Foster
Barrett, R. H.
Brathy and Hinchliffe

BREFFIT'S (Lim.)

Evans, Sons and Co.
Fitch, W. B., and Co.
Hearn, E. A., and Co.
Hunt, W. F. (Caps)

KILNER BOTTLES

Lang, Jules, and Co.
May, Son and Thompson
Poths, H., and Co.

SANDERE, H. G., and SON

Sandere, H. G., and Son
Shirley, A. W.
Taylor, E., and Co.
Taylor, G., and Co. (Limited)

TOOGOOD

Toogood

YOULDON, E.

BRUSHES

Dukas and Co.
Goad and Co. (Tooth)
Moseley, David, and Sons
Sutton, O., and Co. (Tooth)

BUTTER COLE, &c.

Oldfield, Pattinson and Co.
Tomlinson and Hayward

BOXES

Austin and Co. (Cardboard Ayrton and Saunders
Chalmers, W. B.
Noake, B., and Co.
Owen, J., Jr.

PARMENTIER, I. W. & CO. LTD.

Robinson and Sons
Self Opening Tin Box Co.

CAMPHOR

Howards and Sons
Keene and Ashwell (Homoeo-
May and Baker [pathic

CAPSULES

Denoual, J. (Medicinal)
Duncan, Flockhart and Co.
Evans, Sons and Co.
Hooper, B., and Co.
Maw, S., Son and Thompson
Robertson, J., and Co.

CAPSULES (METALLIC)

Bette and Co.
Melin, C. (Machine)
Sandere, H. G., and Son

CARMINE

Bush, W. J., and Co.

CSERA SAGRADA

Duncan, Flockhart and Co.
Evans, Sons and Co.
Ferris and Co.
Moss, J., and Co.
Squires and Sons

CATALOGUE

Evans, Sons and Co.
May, Son and Thompson, S.
May, Roberts and Co.
Sanger and Son
Thompson, Walters, Hole and Co. (Limited)

CRSHD LINSEED

Mumford, G. S.

CEMENT

Foukles, W. J.
Kay Bros., Lim.
Mumford, R.

CHALK PRECIP.

Duon and Co.
Levermore, Aug., and Co.
White, A., and Sons.

CHEMICALS

Andreae, Oscar and Co.
Boehm, F.
Bramwell and Son
Brunner, Mond and Co., Lim.
Bush, W., Son and Co.
Dunn and Co.
Fletcher Fletcher and Stevenson
Fuerst Bros.
Gaskell, Nelson and Co. (Bleach-potash of Soda)
Goodall, Backhouse and Co.
Greft and Co.
Hill, A. S., and Son
Howards and Son (Pharm.)
Kuhn, B.
Levermore, Aug., and Co.
Lofthouse and Saltmer
May and Baker
Morris and Callard
Mose and Co.
Pronk, Davis and Co.
Steinbach, G. (Pumilite)
Smith, T. and H., and Co.
Tyke and King
White, A., and Sons
Zimmermann, A. and M.

CHEST PROTECTS

Bailey, W. H., and Son
Hockin, Wilson and Co.
Maw, Son and Thompson, S.
Sands and Sons
Schutze, F., and Co.
Thompson, Walters, Hole and Co. (Limited)

CHLORIDE OF GOLD

Rowland, L.

CHL. OF POTASH

Burroughs, Wellcome and Co.
Hooper, B., and Co.

CHLORIDE OF LIME

Government Sanitary Co.
National Chemical Co.

CHLORODYNE

Davenport (Brown's)
Freeman, R.
Towle, A. P., and Son

CHLOROFORM, &c.

Duncan, Flockhart and Co.
Macfarlan, J. F., and Son
Smith, T., and H., and Co.
Wright, Layman and Umney

Zimmermann, A., and Son

CITRIC ACID

Hassalls (Phospho)
COCAINE-HYDRO.

Howards and Sons
COCA WINE

Armbrecht, Nelson and Co.
Evane, Sons and Co.
French Hygienic Soc.

COCONA & CHOCITE

Gadbury Bros
Fry and Sons
Rowntree and Co.
Scheibler Bros, and Co.
Van Houten's Cacao

COD-LIVER OIL

Allen and Hanburys
Brockle and Bowld
Burroughs, Wellcome and Co.
Evane, Sons and Co.
Hill, A. S., and Son
Lofthouse and Saltmer

Oppenheimer Bros, and Co.
Smith, T. J.

Southall Bros, and Barclay
Wooley, Sons and Co.

Wright, Layman and Umney

COFFEE

Symington and Co. (Coffee
Essence)

COLPSIBLE TUBES

Batts and Co.
Brooks, Peel and Co.

Sanders, H. G., and Son

COMPRESSED

MEDICINES

Allen and Hanburys
Blyton, T. Base, and Co.

Burroughs, Wellcome and Co.

Hooper, B., and Co.

Wyley and Co.

CONFETIONERY

Blyton, T. Base, and Co.
Opal Vanish Co. (Colours)

Gibson, E., and Sons

Kortfoot, T.

Pascal, J.

Warrick Brothers

CONCENT. LIQS.

Evans, Sons and Co.
Fletcher, Fletcher and Stevenson

CORN CURES

May, Son and Thompson, S.

Robinson, B.

Seabury & Johnson (Plasters)

Solport Bros. (Plasters)

Thompson, M. F.

Young, H.

COTTON WOOL

Haynes, G., and Co. (Abercromb)
Robineau and Son (Absrnt.)

Sanger, J., and Sons

Seabury and Johnson

DENTIFRICES

Jewsbury and Brown
Maw, Son and Thompson, S.
Newbrey and Sons
Reeb, H.
Sutton, O., and Co.
Thompson and Capper
Warwick Bros.
Woods, W. (Areca Nut)

DISINTEGRATORS

Carter, J. H.

DOG MEDICINES

Spratts (Patent)

DISINFECTANTS

Government Sanitary Co.
Hamilton and Co.
Joyes' Sanitary Compounds
National Chemical Co.
Seabury and Johnson
Sanitas Co.

DRUGGISTS' SUN.

Ayrton and Saunders
Bailey, M., and Co.
Barclay and Sons (Limited)
Evane, Lescher and Webb
Evane, Sons and Co. (Savars)
Hill, A. S., and Son
Hockin, Wilson and Co.
Iridis and Co.
Kay Bros., Lim.
Lynch and Co.
Marriot, E., and Co.
Maw, Son and Thompson, S.
May, Roberts and Co.
Sanger and Sons
Schutze and Co.
Thompson, Walters, Hole and Co.
Toogood, W.

DRUMS, CANS, &c.

Noakes and Co.

DYES

Pronk, Davis and Co.

EAU DE COLOGNE

Farina, J. M.

Shirley, A. W.

EFFERVESCENT

Allen and Hanburys

ELECTRIC APPAR.

Darton, F., and Co.

Gent and Co.

Orme and Co.

EMBROCATION

Clark, W.

Clarkson and Co.

Elliman, Sons and Co.

ENEMAS

Bailey, W. H., and Son

Ingram and Son

Maw, Son and Thompson, S.

Sanger and Son

Schutze, F., and Co.

ENGRAVERS

Barker, W., and Son

Correas, J. R. (Glass)

Harris, A. J. (Glass)

ESSENTIAL OILS

Boehm, F.

Bush, W., Son and Co.

Cocking (Japan Peppermint)

Cummock, J.

Duckworth and Co.

Evans, Some and Co.

May and Baker

Stevenson and Howell

Symee and Co.

Treatt, R. C.

Warrick Brothers

Wright, Layman and Umney

Vogt, G.

ESSENCES, FRUIT AND SOLUBLE

Beckett, W.

Boehm, F.

Brathy and Hinchliffe

Burgoyne, Burbridge and Co.

Bush, W. J., and Co.

Cummock, J.

Duckworth and Co.

Goodall, Backhouse and Co.

Hill, A. S., and Son

Southall, C., and Co.

Stevenson and Howell

Tyke and King

Watson and Wates

HOPS

Wilkinson, A., and Sons

HOP ALE ESSENCE

Hay, W.

HYPOPHOSPHITES

Duncan, Flockhart and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Co.

Symes and Co.

Tyke and King

HOSPITALS

Bolingbroke House

London Homoeopathic

INHALERS

Anderson and Adams

Evans Sons and Co.

Godfrey and Cooke

Maw, Son and Thompson, S.

Toogood, W.

EXTRACTS, FLUID

Allen and Hanburys

Barber, G. (Chloric)

Burney, Vanish Co. (Colours)

Gibson, E., and Sons

Kortfoot, T.

Pascal, J.

Warrick Brothers

CONCENT. LIQS.

Evans, Sons and Co.

Fletcher, Fletcher and Stevenson

CORN CURES

May, Son and Thompson, S.

Robinson, B.

Seabury & Johnson (Plasters)

Solport Bros. (Plasters)

Thompson, M. F.

Young, H.

EXTRACT, MEAT

Australian Meat Co.

Bovril (Limited)

Brand and Co.

Deneaeyer's Peptone Co.

Liebig Co.

COTTON WOOL

Haynes, G., and Co. (Abercromb)

Robineau and Son (Absrnt.)

Sanger, J., and Sons

Seabury and Johnson

FLESH GLOVES

Solport Bros.

FEEDING BOTTLES

Brefitts, E. and Co., Lim.

Evans, Sons and Co.

Hearn, E. and Co.

Hockin, Wilson and Co.

Kilner Bros.

Maw, Son and Thompson, S.

Marriot, E., and Co.

Roberts and Co.

Toogood, W.

FLY PAPERS

Ford, Shapland and Co.

Mather, W.

Tunbridge and Wright

Wilson & Co.

FILTERING

Andrews, R. W.

Doulton and Co.

Mawee, Swan and Weddell

Silicated Carbon Filter Co.

FOOD (Infants' & Invalids)

Allen and Hanburys

Bengier's Pancreatised

Bovril (Limited)

Brand and Co.

Dahl's Dyspepsia Oakes

Goodall, Backhouse and Co.

Hearon, Square (Malted)

Liebig, S.

Mottershead & Co. (Benger's

Pontex and Wood)

Nestle, H.

Food)

FORMULE

Brockle, T. Bage, and Co.

GINGER ALE

Hay, W. (Essence)

Kimmond and Co.

Mills, R. M., and Co.

GLYCERINE

Fink and Co.

Price's Candle Co.

Van Geelkerken and Co.

GUTTAPERCHA

Duncan, Flockhart and Co.

Curtis and Co.

Hearon, Squire and Francis

Hill, A. S., and Son

Kerfoot, T.

(Citrate)

Murray, Sir James, and Son

Southwell, C., and Co. (Citrate)

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Co.

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Stevenson

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Stevenson

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Stevenson

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Stevenson

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Stevenson

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Stevenson

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Stevenson

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.

Dunn and Co.

Fellowe

Fletcher, Fletcher and Stevenson

Potter and Clarke

GRANULAR PREP.

Burroughs, Wellcome and Co.</

PILLS (Coated, &c.)

Allen and Hanburys
Beecham, Thomas
Blair's Gout Pills
Evans, Sons and Co.
Hooper, Dr.
Holloway
McKesson and Robbins
Newberry and Sons
Sanger, J., and Sons
Warner, W. E. (Coated)
Wyles and Co.

PILL MACHINES

Robertson, J., & Co. (Coating)
Toogood, W. (Coater)

PLASTERS

Cooper and Co.
Johnson and Johnson
Mather, W.
Maw, Son and Thompson,
Quinton, J., and Co.
St. Dalmat, A. De
Seabury and Johnson
Thompson, M. F.
Young, H.

PODOPHYLLIN, &c.

Keith, B., and Co.
Smith, T., and H.

POLISHING

Bradley and Bourdas (Albatum)
Oakley, John, and Sons
Griffiths, T. M.

PORCELAINGOODS

Toogood, (E.O. Pots, regist.)

PRINTING

Bowers Bros.
Cyclostyle Co.
Davis, J., and Co. (Limited)
Ford, Shapland and Co.
Silverlock, H.
Townsend, J. (Exeter)

PUMILINE

Stern, G., and G.

QUININE SALTS

Andreae, Oscar, and Co.
Howards and Sons
Kuhn, B.
Zimmermann and Co.

RECIPES

Brooks, T.

RENNET

Dunoon, Flockhart and Co.
Oldfield, Pattinson and Co.

SACCHARIN

Allen and Hanburys
Burroughs, Wellcome and Co.

SALICIN

Macfarlan and Co.
Smith, T., and H., and Co.

SALOL

Kuhn, B.

SAUCES, PICKLES

Goodall, Backhouse and Co.
Tyre, P.
SCHOOLS, &c.
Bolingbroke House
Central School of Chemistry
and Pharmacy
City School of Chemistry and
Pharmacy (Lim.)
Liverpool School
London Homoeopathic and
Medical School
London Hospital and Medical
College
Manchester College
Owens College
South London School of
Pharmacy, Lim.
The School of Pharmacy
University of Glasgow
Westminster College

SOAP

Blondeau and Co. (Vinolia)
Chiswick Soap Co.
Cook, E., and Co.
Pearls' Soap

SELTZOGENES

Bratty and Hincliffe
Evans, Sons and Co.
Fevre, T.

GERAULT

Idris and Co.
May, Roberts and Co.
Thompson, Walters, Hole and
Co. (Limited)

SHAVING

Hovenden and Sons
Lloyd's, Mrs., Euxesis

SHEEP DIP

Bigg, T.
Fletcher, Bros. and Co
Grindley and Co.

QUILBELL

Tomlinson and Hayward

SHOP FITTERS

Bowling and Govier
Bygrave, J. and W.
Corsan, J. K.
Evans, Sons and Co.
Howlett, S.
Natali, E. (Show Cases)
Poths, H., and Co.
Treble, G., and Son
Yates, W. S.

SPIRIT

Board and Son
Burrough (Pure and Methyl.)
Harvey, J. W., and Co.
Jones and Co. (Methyl.)
Leslie, J., and Co.
Macnair, A., and Co.
Macnair, J., and D., and Co.
Phillips and Co.
Smith, Stephen and Co.

SPONGE

Harris and Co.
Maw, Son & Thompson (Bags)
Peterson, M., and Co.

SPECTACLES

Botwright and Grey
Darton, F., and Co.
Raphael and Co.

STAMPS (RUBBER)

Hickisson, J.
Pollard, A. W.

STOPERS

Austin and Co. (Sprinklers)
Barnett, and Foster (The
Eclipse)
Sanders, H. G., and Son

STOVES

Clark, S. and Co.

SURGICAL

Ayrton and Saunders
Bailey, W. H., and Son
Barclay and Sons (Limited)
Cooking, J. T.

ESCHMANN

Eschmann Bros. and Walsh
Haywood, J. H.
Inman and Son

LIVERPOOL

Maw, Son and Thompson, S.
Milne, J.

ROBINSON

Robinson and Sons

SCHUTZER

Fitzgerald, F., and Co.

THOMPSON

Thompson, Walters, Hole and
Co. (Limited)

WOOLLEY

Woolley, Sons and Co.

STARCH

Critchley (Gloss)

SUGAR

Gibson, R., and Sons

SULFONAL

Burroughs, Wellcome and Co.

GREEFF

Greeff, R. W., and Co.

MAY

May and Baker

SYPHONS

Barnett and Foster

BRATHY

Brathy and Hincliffe

FAVARGER

Favarger and Co.

FEVRE

Fevre, T.

GUERET

Gueret, E., and Co.

KILNER

Kilner Bros.

LANG

Lang, Jules, and Co.

MELIN

Melin, C.

SPRINKLERS

Fletcher, Fletcher (Liquors)

IDRIS

Idris and Co.

SOUTHWELL

Southwell, C., and Co.

TARTARIC ACID

Andreae, Oscar and Co.

GREEFF

Greeff, R. W., and Co.

TEETHING PADS

Marriot, E., and Co.

TILL

Stokes, G. R., & Co. (Limited)

TIN CANISTERS

Noakes, B., and Co.

TEA

Cave, Johnson and Co.

French and Langdale

Gt. Tower St. Tea Co.

Santha Tea

Un ted Kingdom Tea Co. (Ltd.)

Walker and Dalrymple

TOBACCO—**CIGARETTES**

Peacock, M. & R.

 THERMOMETERS

Bailey, W. H., and Son

Darton, F., and Co.

TOILET

Albunar Paper Co. (paper)

Foulkes, W. J.

Hopgood and Co.

Mack, H.

Munford, G. S.

Sanitary Paper Co.

Simon, J.

Travolta, S., and Co.

Trueitt, H. P. (Limited)

Vigis, L.

TOOTHPASTE

Jewsbury and Brown

Maw, Son and Thompson, S.

Quelch, H. C.

Sutton, O., and Co. (Block)

Wilson, A. (Bunter's)

Woods, M. (Areca)

TRADE MARKS

Horn and Son

TRUSSES

Ayrton and Saunders

Bailey, W. H., and Son

Haywood, J. H.

TYPE-WRITING

Pollard, A. W.

URETHANE

Howards and Sons

VACCINATION

Kenner, Dr. (Vaccine Lymph)

Vaccine Association (Lymph)

VALUERS AND TRANSFR. AGENTS

Baker, P. C., and Co.

Brett, F. J.

Crocker, G. B.

Greenwood, S.

Orridge and Co.

Tomlinson, T., and Son

VERMIN KILLERS

Battle, J. R.

Sanford and Son

Steiner and Co.

VASELINE

Chesbrough Manufcturing Co.

VETERINARY

Biggs, T.

Clark, W.

Day and Sons

Down, S. and Hewitt

Elliman, Sims and Co.

James, W. H. (Blister)

Snraits (Dogs)

Sutton, F., and Co.

Walker, Troke and Co.

Wileys and Co.

VINOLIA

Blondeau and Co.

WHOLESALE AND EXPERT DRUGGS

Allen and Hanburys

Barron, Harveys and Co.

Brothers, J. and Co.

Burgoyne, Burbidge and Co

Bush, W., Son and Co.

Clay, Doel and Co.

Cooper, C. F., and Co.

Evans, Sons and Co.

Evans and Sons (Limited)

Ferris and Co.

Goodall, Backhouse and Co.

Harker, Stagg and Morgan

Hearon, Squire and Francis

Hewlett and Son

Hill, A. S., and Son

Lofthouse and Saltmer

Macfarlan, J. F., and Co.

Oldfield, Pattison and Co.

Potter & Clarke (American)

Sims, R., and Co.

Symes and Co.

Thomson and Capper

Thompson, W., and Son

Walker, Troke and Co.

Willows, Francis, and Butler

Woolley, Jas., Sons and Co.

Wright, Layman and Umney

Wileys and Co.

WINES, SPIRITS

Boord and Son (Malt)

Coleman and Co. (Meat and

Durrant, G. (Orange)

Goodall, Backhouse and Co

Harvey, J. and W., and Co.

Iriss & Co.

Jones and Co.

Millar, A., and Co.

Phillips, G., and Co. (White

Spirits of Wine)

Robinson, B. (Orange, Beer

Smith, S., and Co. (S.V.R.)

USE **LIEBIG COMPANY'S EXTRACT** OF MEAT.

* * Ask for the **COMPANY'S Extract**, and see that it bears Justus von Liebig's **SIGNATURE IN BLUE INK** across the Label.

NOTE REDUCED PRICES OF QUININE PILLS.

LIST OF "McK. & R." CAPSULED PILLS
OF THE BRITISH PHARMACOPŒIA AND OTHER STANDARD AUTHORITIES.

McKESSON & ROBBINS,
WHOLESALE DRUGGISTS AND MANUFACTURING CHEMISTS,
ESTAB. 1833.] **NEW YORK, U. S. A.** [ESTAB. 1833.

Supplied by the Principal Wholesale Houses in the Trade throughout Great Britain and Ireland.

The reputation of Gelatine-Coated Pills has been created by our manufacture.	DOZ. BOTTLES containing		Being completely sealed, all substances are perfectly preserved from oxidation.	DOZ. BOTTLES containing	
	25 PILLS.	100 PILLS.		25 PILLS.	100 PILLS.
Aloin	1/ gr.	5/	Quinine, Bisulphate.....	5/	16/
"	4/ gr.	6/	" "	5/	16/
"	2/ gr.	7/	" "	5/6	18/
"	1 gr.	11/	" "	7/6	26/
" Compound	7/	24/	" "	9/6	34/
" and Strychnine	7/	24/	" "	11/6	42/
" Strychnine and Belladonna	7/	24/	Sulphate	5/	16/
" or Aperient, No. 1 (Clark)	9/	32/	" "	1/ gr.	20/
Morphine Muriate	7/	24/	" "	2 gr.	28/
"	1/ gr.	7/	" "	3 gr.	36/
Narcotic Extracts (Brown-Sequard)	15/	56/	" "	4 gr.	10/
				5 gr.	12/
					44/

A Complete List of Formulas and Prices will be mailed promptly on application.

In ordering, be careful to specify "McK. & R." CAPSULED PILLS.

Originated 1870, by McKESSON & ROBBINS, New York, U.S.A. Merchants, Shippers, and the Wholesale Houses in the Trade are supplied by Messrs. S. MAW, SON & THOMPSON, 7 to 12 Aldersgate Street, London, E.C.; Messrs. BURROUGHS, WELLCOME & CO., Snow Hill Buildings, London, E.C.; and Messrs. HOCKIN, WILSON & CO., 38 Duke Street, Manchester Square, London, W.

**Coca
Coca
Coca
Coca**



**Tablets
Lozenges
Elixir
Tea**

SOLE PROPRIETORS—
THE FRENCH HYGIENIC SOCIETY OF LONDON, 6 CONDUIT STREET, REGENT STREET, LONDON, W.

whence will be forwarded to any applicant a Pamphlet containing the testimony of eminent British and Foreign Medical Authorities to the invaluable properties of the Coca Preparations.

"THE CHEMIST AND DRUGGIST" (of March 30, page 429) says—"The French Hygienic Society of London have for some time made a speciality of preparations of the coca leaf, such as coca-tobacco, which were calculated to be used as articles of daily consumption; and they now add to their list several which are designed to maintain the popular use of the Peruvian invigorator. Coca tea—an excellent blend of the coca leaf and a choice Ceylon tea—is likely to be a favourite, for it makes a pleasant beverage of good aroma which is powerfully restorative. Their coca elixir is a good idea. It is intended for use along with any table wine, 15 to 20 drops of it making with a glass of sherry a good coca wine, possessing the full flavour of the leaf. This flavour is a marked characteristic of all the preparations, especially the tablets and lozenges, and is an indication that care has been exercised in their manufacture. The tablets and lozenges may be used for throat troubles; and those without borax are a portable form of the restorative for use by athletes and pedestrians. All these specialities are put up in attractive style."

RETAIL PRICES.

Coca Tablets and Lozenges in boxes, **1/-, 2/6, & 4/- per Box.**
Coca Elixir ... " " " " " " " " " " " " " " " " " " **3/-, " Bottle.**

Coca Tea in tins of 1 lb. **4/-, ½ lb. 2/-, ¼ lb. 1/-.**

USUAL WHOLESALE DISCOUNT. CAN BE OBTAINED FROM ALL WHOLESALE HOUSES

Dermatopathy.

LONDON.]

SEPTEMBER 14TH.

[1889.]

ICHTHYOL

AS AN EXTERNAL REMEDY IN SKIN DISEASES.

Ichthyol (Ammon. Sulpho-Ichthyolate) is a distillation derived from the fossilised remains of fishes, and was discovered by Schröter. Dr. Charles J. R. McLean, Yeadon (*British Medical Journal*, March 9, 1889), says that it acts in three ways: (1) As A PROTECTIVE.—When a solution of it is painted over the skin surface it quickly dries, forming a thin layer somewhat resembling friar's balsam or collodion, and so protects the skin from the air, dust, &c. (2) As A RELIEVER OF CONGESTION.—When applied to healthy skin its effects seem *nil*, but where there is an active congestion of the part it acts promptly by causing contraction of the arterioles, and so diminishes the vascularity of the part. (3) As A DESICCANT.—As it reduces the vascularity of congested skin, the outward flow of serum is also reduced, and consequently the part becomes drier. In these three actions are the essentials of the treatment of many skin diseases. Dr. McLean has used Ichthyol in the following cases with marked success.

SIMPLE ERYTHEMATOUS ECZEMA.—In this stage of the disease, before the vesicles develop, he has found Ichthyol a superior remedy to any others. In simple erythema a solution of $\frac{3}{i}$. Ichthyol to $\frac{3}{i}$. of Distilled Water is a proper strength to use, and should be painted on with a camel's hair brush once in every four hours. If the itching be very severe the solution may be applied oftener for the first few hours, say once in every two hours for three applications; it will very soon allay the itching, which is a very important feature in the treatment. Common soaps should be avoided; and if any soap is used at all one without excess of alkali, such as Lanoline or Ichthyol Soap, should be used. Strongly alkaline soaps remove the natural fat of the skin by saponification, causing consequent drying and liability to chap.

SCALY DRY ECZEMA.—An ointment in this stage is preferable, as it softens the epithelium better, such as $\frac{3}{ii}$. of Ichthyol to $\frac{3}{vi}$. of Lanoline (Liebreich).

WEPPING ECZEMA.—If the Ichthyol solution be applied at the early stage of the "weeping," before much raw surface be formed, it will control any further exudation; but if there be much tender surface it is better to apply the ointment for the first twenty-four hours or so, as then the solution causes some smarting and perhaps pain.

SIMPLE ERYSIPelas.—If caught in the early stage Ichthyol is the best external application; it allays the burning sensation, and either aborts or limits the attack. The solution ($\frac{3}{i}$. to $\frac{3}{i}$) is painted on every four hours, forming a complete protective layer over the part.

URTICARIA-LIKE ERUPTIONS.—Early application of this drug is recommended before many watery blebs are formed; each area should be painted with the solution during the short congestive stage when the slight itching begins.

FURUNCULOSIS.—A strong solution ($\frac{3}{i}$. Ichthyol to $\frac{3}{s.s.}$ Distilled Water) applied once every two hours for three or four applications, and then once every four hours, reduces the base of the boil, and often aborts it altogether if applied early. Tabloids of Sulphide of Calcium internally have been found beneficial.

In most cases of Eczema, Tabloids of Cascara Sagrada are being prescribed as a laxative. Cascara Sagrada stimulates the liver and helps to eliminate any excess of uric acid, which is believed to coexist with, or to be the cause of, many such troubles.

Ichthyol supplied to the Trade at 15s. per lb., also in 1-oz. bottles at 16s. per doz.

Ichthyol Capsules (4 mins.) supplied in bottles of 50 at 27s. per doz.

Ichthyol Soap supplied to the Trade at 8s. per doz.

LANOLINE (LIEBREICH)

AS A BASIS FOR OINTMENTS.

Lanoline (Liebreich) is the fat natural to the skin, and is absorbed by this structure at once. It is absolutely neutral (as distinguished from all imitations, which contain free fatty acids), and never turns rancid, thus differing from ordinary fats. Lanoline is of desirable consistence, does not melt below body heat, is homogeneous, and free from hard crystalline bodies. It will combine with water, and is miscible with all medicaments indifferently. So penetrating is Lanoline that but half the usual quantity of any drug ordinarily employed in making ointments should be used. Through the instrumentality of this agent, Narcotics, Quinine, Iodide of Potassium, Ichthyol, Mercury, and all medicaments prescribed in skin diseases have been satisfactorily introduced into the system. It never irritates, and is always grateful. Lanoline has been used as a basis for ointments in Scabies, Psoriasis, Scrofuloderma, Pruritus, Erythema, Sycosis, Tinea Versicolor, Epithelioma, Lupus, Eczema, Dermatitis, &c. It is now employed by all dermatologists with brilliant results.

Lanoline (Liebreich) supplied to the trade in 1-lb. and 7-lb. tins at 2s. 8d. per lb. Anhydrous Lanoline (Lanolinum anhydricum), at 3s. 4d. per lb. Lanoline Base (Ung. Lanolini), 2s. 2d. per lb. Anhydrous Lanoline Base, 2s. 10d. per lb. Ceresin, 1s. 6d. per lb. Paraffinum, 1s. per lb. (packages extra). Lanoline Cold Cream supplied in pots at 14s. per doz. Lanoline Hazeline Ointment, in pots at 14s. per doz. Lanoline Pomade, in pots at 14s. per doz. Lanoline Toilet Soap, 8s. per doz. Lanoline Eucalyptine Soap, 8s. per doz. Lanoline Pinol Soap, 8s. per doz. Toilet Lanoline, in collapsible tubes at 4s. 6d. per doz.

BURROUGHS, WELLCOME & CO., Snow Hill Buildings, LONDON, E.C.

NOTICE.

We propose to sell "PETROLATUM" as low as, or, if necessary, lower than, any of the imitations of our goods, improperly represented as being equal to or cheaper than "VASELINE."

"PETROLATUM" is not equal to, or intended as a substitute for, our Mark "VASELINE," but is far superior to any other Petroleum Jelly.

Of all Wholesale Houses. In 50-lb. Tins, 2 Tins in a Case, and Casks of about 3 cwt. each.

CHESEBROUGH MANUFACTURING CO., 42 Holborn Viaduct, LONDON, E.C.

SULPHONAL-BAYER TABLOIDS.

From an extensive use of Sulphonal in private and hospital practice, covering cases of insanity [mania and melancholia], delirium tremens, morphine habit, sleeplessness from mitral insufficiency, from syphilis, from malarial poisoning, from anaemia, and in Bright's disease, the following conclusions have been arrived at, viz.:-



(1) It is a safe hypnotic, of remarkable intrinsic value, especially in cases of insanity. In all cases reported, except one, refreshing slumber of from two to eight hours' duration was produced by fifteen grains, dry or in warm soup, repeated in one hour if necessary.

(2) It is effective in those cases where bromides, chloral, paraldehyde and hypnone have been tried in vain.

(3) It possesses pure hypnotic properties.

(4) Its advantages over other hypnotic remedies are: that it does not constipate as do the preparations of opium; the sleep produced by it seems to more closely resemble natural sleep than does that of any other drug; having neither taste nor odour, it is easily given in cases where patients object to taking medicines.

The Tabloids are recommended as being more readily assimilated. Sulphonal in crystals or coarse powder is very insoluble, but when the Tabloids are compressed the crystals are reduced to an impalpable powder, which enhances its solubility in the stomach.

Sulphonal Tabloids (5 gr.) are supplied in bottles of 25 and 100, at 12/- and 35/- per dozen; Sulphonal-Bayer supplied to the Trade at 1/6 per oz. (subject to fluctuation).

BURROUGHS, WELLCOME & CO., SNOW HILL BUILDINGS, E.C.

ISO-BUTYL NITRIS.

Also GLASS CAPSULES of ISO-BUTYL NITRITE.

For use in Angina Pectoris, Asthma, and similar complaints, by Inhalation.

Liquor Cascarae Suavis.

(REGISTERED.)

An agreeable Aromatic Fluid Extract of *Cascara Sagrada*, possessing the full laxative and aperient properties of the bark.

Sol. Äethyl Nitritis.

Containing 3 per cent. of Pure Nitrite of Ethyl, in Absolute Alcohol and Glycerine.

See paper by Professor LEECH on "The Comparative Effects of Spiritus Ätheris Nitrosi and Solution of Ethyl Nitrite," *Pharmaceutical Journal*, December 22, 1888.

Spiritus Ätheris Nitrosi.

Guaranteed to contain the proportion of Nitrous Ether directed by the British Pharmacopœia.

Äther Nitrosus and Sol. Ätheris Nitrosi.

Respectively 8 and 4 times the strength of the Spirit.

JAMES WOOLLEY, SONS & CO.

Manufacturing Pharmaceutical Chemists,

M A N C H E S T E R.

Laboratories and Drug Mills, KNOWSLEY STREET, CHEETHAM.

QUOTATIONS AND PRICE LIST FORWARDED ON APPLICATION.



ESTABLISHED 1859.

PRINCIPAL OFFICE, 42 CANNON STREET, LONDON, E.C.

BRANCH OFFICES:

MELBOURNE, SYDNEY, AND NEW YORK.

Published every Saturday.

Subscription 10s. per year, payable in advance; dating from the commencement of any month.

Supplied only to persons connected with the Trade.

Post free to every country in the world. Single copies 4d. each.

Cheques or Postal Orders should be payable to EDWARD HALSE, and crossed MARTIN & CO.

Supplied regularly to every member of the following Societies, who have adopted THE CHEMIST AND DRUGGIST as their official organ:—

The Pharmaceutical Society of New South Wales.**The Midland Pharmaceutical Association of New Zealand.****The Pharmaceutical Society of Queensland.****The Pharmaceutical Society of South Australia.****The Hobart Chemists' Association.****The Launceston Pharmaceutical Association.****South African Pharmaceutical Association.**

For Australasian subscribers the subsidiary journal, THE CHEMIST AND DRUGGIST OF AUSTRALASIA, is included.

Literary Contents.

PAGE	
Bankruptcy Report	398
British Pharmaceutical Conference — Twenty-sixth Annual Meeting at Newcastle-on-Tyne (illustrated):—	
Reception and Welcome	348
Report of Executive Committee	350
President's Address	352
Portrait of the President ..	353
Papers and Discussions :—	
Tincture of Senna (B. S. Proctor)	356
Papain as a Digestive Agent (A. Ball)	358
Solubility of Glass Bottles (R. Reynolds)	361
Extract of Stramonium (A. W. Gerrard)	361
Ferri et Ammon Citras (B. S. Proctor)	362
Easton's Syrup (T. Maltby Clague)	363
Nitrous Vitriol in Aerated Waters (J. Pattinson) ..	364
Ipecacuanha Wine and Fluid Extract (J. O. Braithwaite and J. C. Umney); Assay of Vin Ipecac. (T. P. Blunt) ..	365
Note on Hypophosphorous Acid (H. W. Jones); Application of Chloride of Methyl (W. Martindale) ..	366
The Chemistry of Euonymus Bark (Naylor and Chaplin); Misconceptions about Lithia (L. Siebold) ..	367
Arsenite in Glycerine (L. Siebold)	358
Lead in Drinking Water (R. Reynolds)	370
Strychnine in Vermin-Killers (A. H. Allen) ..	371
Scale of Small Residues (B. S. Proctor)	373
Strophanthus Plants (Thos. Christy); Chemistry of Strophanthus (Dr. Fraser) ..	374

ADVERTISEMENTS of situations vacant and wanted, businesses for disposal, &c., will be received by us up till the first post on Friday morning.

MR. HARRY V. DAKERS, our agent for the United States, has removed his office from Liberty Street to 24 Union Square, New York.

SUBSCRIBERS' ADDRESSES.—In order to ensure uninterrupted delivery of THE CHEMIST AND DRUGGIST to subscribers who may be changing their address, notice of such change should be received by the Publisher not later than Monday of the week in which the journal is to be sent to the new address.

THE PARIS EXHIBITION.—Our office in the Paris Exhibition is No. 9, the British Section of the Liberal Arts Gallery, where subscriptions can be paid or single copies purchased by persons connected with the drug trade. Our representative there, Mr. Lord, speaks French fluently, and will be pleased to render any assistance in his power to readers of THE CHEMIST AND DRUGGIST.

General and Provincial News.

THE BIG GOOSEBERRY SEASON.—A case of arsenic-eating, which is said to be causing much bewilderment to the leading American physicians, is that of Somer B. Yume, of Providence, Rhode Island, who eats every day two heaped tablespoonyfuls of arsenic, feels all the better for it, and declares that he would die without it. Twenty-five years ago Mr. Yume was bitten by a rattlesnake. The pains were so intense that in despair he tried to commit suicide by taking arsenic. To his surprise the mineral poison temporarily overcame the snake poison. Since then he has had to eat arsenic twice a day to counteract the effects of the snake bites, which show themselves in swellings of the arm and freezing of the blood every morning and evening.

SUICIDE OF A WELL-KNOWN NEW JERSEY DRUGGIST.—Charles Buckholtz, for many years one of the leading druggists at Elizabeth, N.J., committed suicide yesterday afternoon at his home, 333 Elizabeth Avenue, by stabbing himself in the head with a clasp-knife. He had been ill for nearly a year with gastritis. About one o'clock his mother found him in his room, reclining in an armchair, with an ugly wound in the side of his head. By his side was a knife besmeared with blood. Mr. Buckholtz was lifted up and found to be breathing faintly. He expired before medical assistance arrived. Traces of ether were found on his clothing, and it is supposed he inhaled the drug to deaden his sensibilities before killing himself. He was 42 years old, and had been in business in Elizabeth since 1868.

ALLEGED SECRET HYDROPHOBIA CURE.—A certain cure for hydrophobia is alleged to have been discovered in Lancashire. The chief constable of Clitheroe has found the remedy in the possession of a poor family at Colne, and he last week sent the following communication to the Clerk of the Privy Council, Agricultural Department:—"I desire to draw your attention to a remarkable cure for hydrophobia which has come under my notice here. On the 28th July last year several young children were bitten in this borough by a dog which was unmistakeably suffering from rabies. I sent them to undergo the treatment of this cure, and they have all been perfectly cured. It is no new discovery, but has been practised with unvarying success for over 130 years. Since 1852 there have been 498 persons treated, and not a single failure is recorded. This, I think, is ample proof of the genuineness of the cure. The medicine is not only applicable for human beings, but also for animals. A quantity of the medicine is now in my possession." Since then several letters have been received from the Council asking for further particulars, and there is every likelihood that experiments will be made at once by the professional officers connected with the department.

The British Pharmaceutical Conference.

TWENTY-SIXTH ANNUAL MEETING.

NEWCASTLE-ON-TYNE.



THE proceedings of the twenty-sixth British Pharmaceutical Conference were commenced, in Newcastle-on-Tyne, by a

RECEPTION

in the new buildings of the College of Science.

The President, Mr. Charles Umney, of London, with several past presidents and a majority of the members of the executive committee, shook hands with something over 200 ladies and gentlemen from all parts of the United Kingdom. For the entertainment of the guests two chamber concerts, each lasting half an hour, were provided. The following were the programmes :—

PART 1.

Trio—"Novelletten"—Moderato and Allegro Scherzando	N. W. Gade.
Song—"Best of All".....	Moir.
Violin Solo—"Bolero"	G. E. German.
Song—"The Bread Winner"	Cotsford Dick.
Trio—"Novelletten"—Larghetto con moto and Finale Allegro	
	N. W. Gade.

PART 2.

Trio—Opus 49—Andante and Scherzo	Mendelssohn.
Song—"Oh! Loved and Lost"	Lord Henry Somerset.
Violoncello Solo—"Au Bord du Ruisseau".....	A. Fischer.
Song—"In Old Madrid".....	Trottere.
Trio—No. 1 Gipsy Rondo	Haydn.

Miss E. Newborn was the pianist ; Mr. J. H. Beers, violinist ; Mr. G. Maddison, violoncellist ; and Miss Mimi Beers, vocalist. The music was excellent, and was much enjoyed by the visitors. There was also an interesting display of photographs, microscopic objects, and physical and chemical apparatus in the physical laboratory, provided by Messrs. Mawson & Swan, Mosley Street, Newcastle, and Messrs. Brady & Martin, Mosley Street, Newcastle. Among the exhibits were the following :—Apparatus showing the transpiration of plants ; Soxhlet's fat-extraction apparatus ; Cailletet's apparatus for liquefying gases ; model of Lodge's smoke-dispersion apparatus ; the Kew Observatory pattern dividing engine, by Messrs. Yeates & Co., Dublin. There was also an apparatus illustrating the manufacture of sulphuric acid, and consisting of (*a*) the production of sulphurous acid from sulphur, (*b*) Glover's tower, (*c*) nitre chamber, (*d*) steam chamber, (*e*) second chamber for continuation of reactions, (*f*) third ditto, (*g*) Gay Lussac's tower, (*h*) apparatus for creating a current of air. The microscopes displayed a number of interesting objects, and there were

exhibited some exquisite photographs taken by Payne's adaptor for micro-photography. The exhibition of photographs by Messrs. Mawson & Swan was a capital one; and the guests spent a pleasant and a profitable time in the laboratory. Refreshments were provided in the council room.

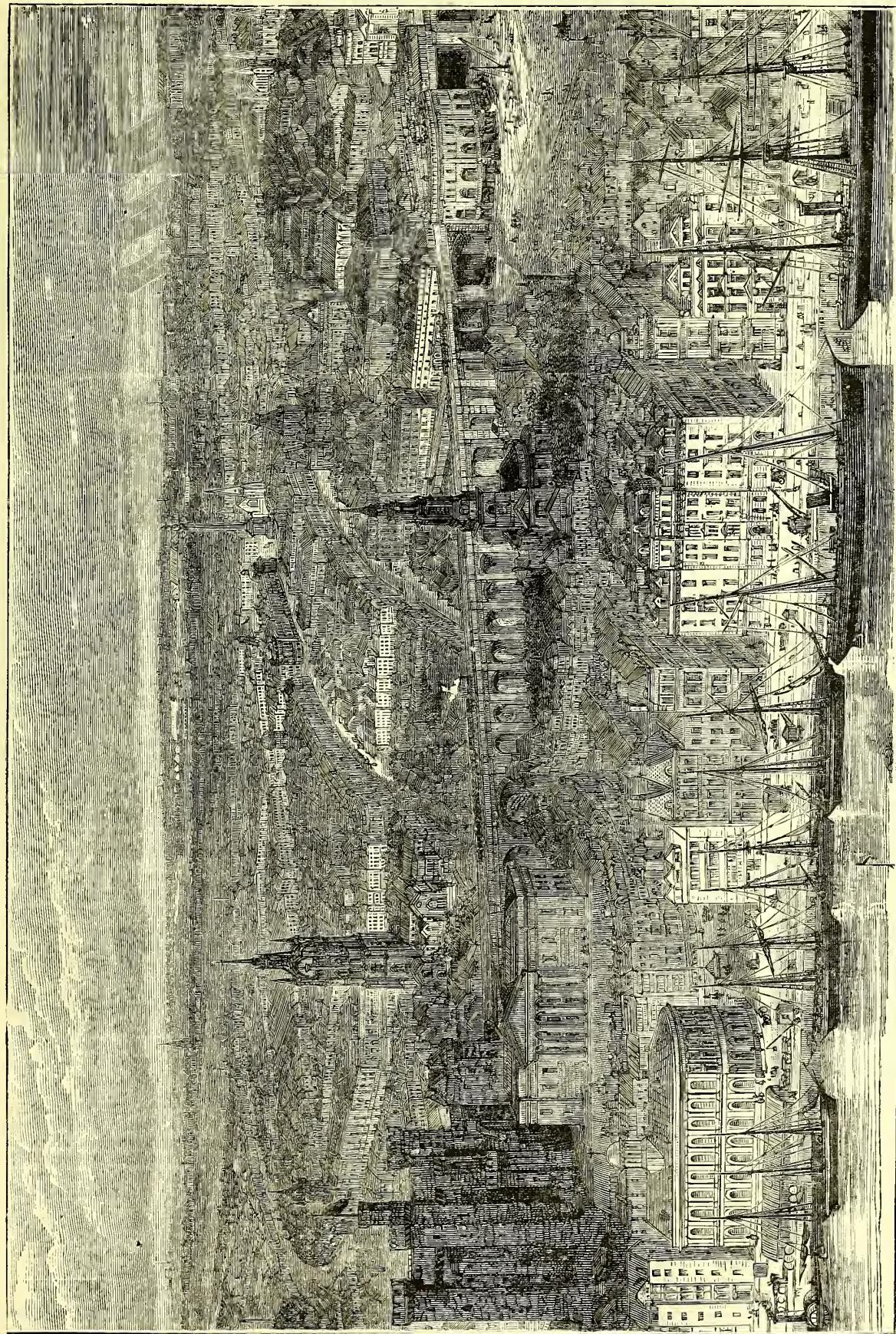
FIRST DAY'S SESSION.

Punctually at 10 A.M. on Tuesday, September 10, Mr. Umney took the chair in the Physical Science Lecture Theatre. He was faced by about 20 ladies and 150 gentlemen. There were on the platform accompanying the President, Principal Garnett, in academical robes, Mr. S. R. Atkins, J.P. (Salisbury), Mr. N. H. Martin (Newcastle-on-Tyne), Mr. Baden Benger (Manchester), Mr. R. Reynolds (Leeds), Mr. H. B. Brady, LL.D., F.R.S., Mr. G. F. Schacht (Bristol), Mr. T. B. Groves (Weymouth), Mr. W. Martindale (hon. treasurer), Mr. J. C. Thresh, D.Sc., M.B., and Mr. W. A. H. Naylor (secretaries), Mr. T. Maltby Clague (local secretary).

WELCOME TO THE CONFERENCE.

The proceedings commenced by the President calling upon Professor Garnett, the principal of the college, to address the Conference.

Principal GARNETT said: It is my pleasing duty, in the name of the President and Council of the Durham College of Science, to welcome you to this city and to this building. (Applause.) In the erection of this structure it was the hope of the college council and governors that our college would prove to be a centre from which literary and scientific education might radiate over the North of England, and the home towards which the literary and scientific institutions of the district might naturally converge. In this hope we have not been disappointed. During the short time that our building has been in existence it has been used by a large number of the universities and scientific societies of the town. (Hear, hear.) Your association has already done much valuable work, but much more remains for it to do, especially in the direction of systematising the scientific education of candidates for the position of pharmaceutical chemists. You, Mr. President, have conferred upon science, and upon the noble profession to which you belong, a lasting benefit by your researches into the chemistry of drugs ; and if this meeting induces some few others to follow in the steps in which you have so nobly led, then our college will have had the honour of participating in a really valuable work when it invited the Con-



NEWCASTLE-ON-TYNE.

ference to use this building for their annual meeting in 1889. It may, perhaps, not be altogether out of place if I were to say a word or two respecting our college for those who are strangers to Newcastle and are unacquainted with our history. The college was formed some eighteen years ago through the joint efforts of members of the Literary and Philosophical Society of Newcastle, of the Mining Institute and the associated coal trades, and last, but not least, the University of Durham. Starting in temporary premises, it became, of course, the first business of the college council to seek for a site in which it might erect a permanent and useful structure, but for many years such a site was not forthcoming. For some sixteen or seventeen years we struggled on in hired and inadequate premises; but at length this site, consisting of rather over six acres, was offered, and was purchased by the college council. About two acres were set apart for the principal building of the college. The plans for that building were constructed, and the portion which you now see as part of the permanent college represents rather more than a quarter of the whole building as thus planned. It was obviously desirable that we should be in possession of efficient laboratories for chemistry and physics. We, therefore, decided to build the chemical and physical sections of the college upon a scale upon which we hoped that the whole college would ultimately be erected, and to temporarily accommodate the other departments of the college in the rooms which we might at first be able to spare from the chemical and physical sections. That was obviously better than erecting a complete college on a small scale. The executive council of the exhibition of 1887 also came to our rescue by presenting to us these temporary buildings, which you see at the west end of the present structure, and which are being used for the accommodation of our technical classes, of our museum, and of our department of fine art, and also of the North of England Branch of the Pharmaceutical Association. It is only necessary to state that in all cases utility for the purposes for which they were required has been considered rather than decorative or artistic effect, and I think we have a building that is fairly well adapted for the purposes for which it is to be used. In conclusion, I have only to repeat my words of welcome, and to state that the President and Council, and all interested in this college are heartily glad to see here the members of the Pharmaceutical Association of Great Britain. (Applause.)

Mr. N. H. MARTIN said the Principal of the College had welcomed them to that building, and they had gathered from his remarks the very wide interest which the Principal took in education. He need not remind them that that interest was wide enough to embrace pharmacists, and he should like to thank Principal Garnett in their presence for the great courtesy and kindness he showed to pharmacists, and the facilities which he placed at their disposal on all occasions. The present occasion was no exception. (Cheers.) His (Mr. Martin's) real duty that morning was not so easily performed. Language such as he could command did not do justice to the message which he had to deliver, namely to bid the Conference, in the name of pharmacists of the North of England, a hearty welcome to Newcastle-on-Tyne. (Cheers.) They had been told that Newcastle-on-Tyne was their old home. Some of them visited Newcastle for the first time, but they came to the home of the Pharmaceutical Conference. They were more fortunate than people who revisited old homes, for they brought with them the three patriarchs, the fathers of the Conference—the one in whom first sprang the germ of the idea (Mr. Schacht), but he need not mention names which were so well known to them, another who gave a practical shape to the idea, their friend on his left [Mr. R. Reynolds], and the third, a gentleman by whose enthusiasm the germ came to life, and the Conference was born in Newcastle-on-Tyne, their friend Mr. Brady. (Cheers.) They were peculiarly fortunate in having these gentlemen with them. In twenty-six years there must be gaps, and they would, perhaps, pardon him for alluding to one—the loss of their first president, Mr. Henry Deane. If Mr. Deane had been there, his happiness in welcoming them would have been complete. Henry Deane was their first president, and he did more, possibly, to make the Conference a success from a pharmaceutical point of view than any other man who had been taken from them. It would have been a joy

to Henry Deane to have been with them to-day. He (Mr. Martin) could assure them that the whole of the pharmacists of that district had heartily accorded and worked with the executive to make preparations for the Conference, and they sincerely hoped that their attempts would please them, and that they would find, even if in some things they were imperfect, that they had tried to do their best, and that their stay would be a success. (Cheers.)

DELEGATES.

Dr. THRESH read a list of the delegates present:—

Pharmaceutical Society of Great Britain.—The President, Vice-President, Treasurer, Messrs. Allen, Atkins, Cross, Gosling, Leigh, Martindale, Newsholme, Schacht, Watt, and the editor, sub-editor, and secretary.

Pharmaceutical Society of Great Britain (North British Branch).—Mr. William Gilmour (chairman), Messrs. D. B. Dott, A. Kinnimont, T. Maben, J. Nesbit, and J. Mackenzie.

Pharmaceutical Society of Ireland.—Messrs. G. D. Beggs and W. F. Wells, jun.

Aberdeen and North of Scotland Society of Chemists and Druggists.—Messrs. Broomhead, Giles, Johnston, Kay, and Paterson.

Birmingham and Midland Counties Chemists' Association
—Mr. Thos. Barclay.

Brighton Association of Pharmacy.—Messrs. Marshall Leigh and W. D. Savage.

Dundee Chemists' Association.—Messrs. Charles Kerr, A. B. Anderson, and James Russell.

Hull Chemists' Association.—Messrs. C. B. Bell and W. H. Hammond.

Leeds Chemists' Association.—Messrs. F. W. Branson, P. Jefferson, and R. Reynolds.

Leicester and Leicestershire Chemists' Association.—Mr. J. W. Clark.

Liverpool Chemists' Association.—Mr. A. H. Samuel (president), Messrs. A. C. Abraham, John Bain, M. Conroy, C. Symes, and W. Wellings.

London Chemists' Assistants' Association.—Messrs. T. A. Ellwood, E. J. Millard, E. Richards, and C. J. Strothers.

Manchester Chemists' Association.—Messrs. F. B. Benger and G. S. Woolley.

Sunderland Chemists' Association.—Messrs. Askew, Fowler, Harrison, Hutchinson, Ranken, Todd, and Turnbull.

LETTERS OF APOLOGY.

Dr. THRESH said he had received a number of letters of apology for absence from well-known attenders of the Conference. The first was from Professor Bentley, who wrote from Devonshire that he was sorry absence from home prevented him attending. As one of the founders of the Conference in that city more than a quarter of a century ago, it would have been peculiarly gratifying to him to have attended the forthcoming meeting, and he wished that it might be in every respect a successful one. The next letter was from Professor Attfield, who said that only ill-health prevented him from being present, and he was much disappointed at having to remain away. Mr. Bottle regretted that he could not attend in consequence of the severe illness of a relative. Dr. Symes, Mr. Brunner, Mr. Thomas Greenish, Mr. J. B. Stephenson (Edinburgh), Mr. R. H. Davies (London), Mr. Wyley (of Coventry), Mr. Charles Thompson (of Birmingham), and Mr. John Moss (of London) had also written letters of apology. There was a passage in the letter of Mr. Moss which he should like to read. Mr. Moss said that "to his mind the Conference was the most powerful agent they had in this country for ventilating matters of pharmacy as distinct from teaching them, and if it or some of its members would only address themselves to the question—Why are we so dependent on foreign pharmacy for many of the most recent and successful remedies? a way might and would be found along which we should lead as far ahead as we now follow behind." (Cheers.) Mr. Thomas Tyrer (London) had also written regretting his absence.

Mr. NAYLOR read the

REPORT OF THE EXECUTIVE COMMITTEE.

Your Committee in presenting a summary of the business it has transacted during the year is glad to be able to report

that the numerical strength of the Conference has been more than maintained, and that there are not wanting signs of increased activity.

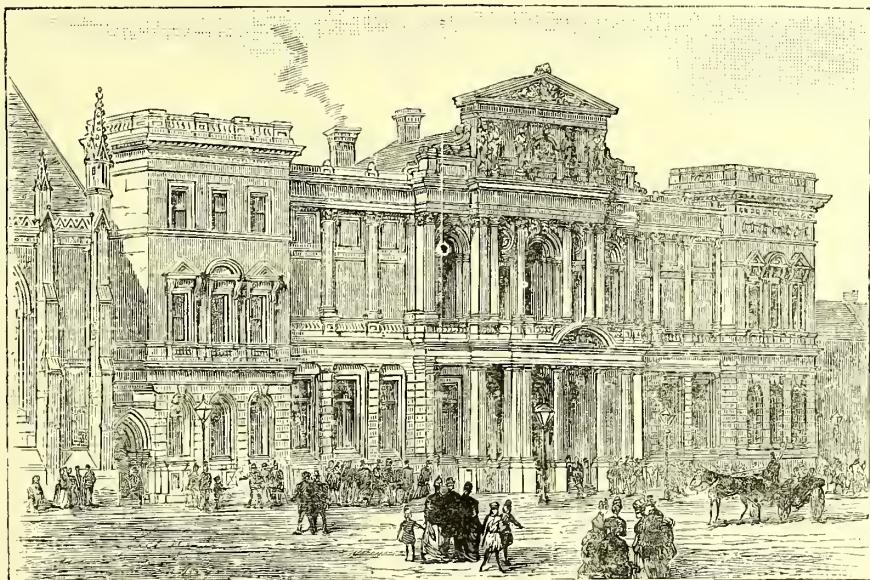
The results of the biennial whip issued two years ago having fallen short of the success it was expected to achieve, your Committee deemed it advisable to try some other mode of appeal. After much deliberation it was agreed that the best form the appeal could take would be that in which the personal element was prominent. It was ultimately resolved that the honorary secretaries should address, in due course, a communication to the secretaries of the various local associations to which Year-books are annually sent, requesting their co-operation in obtaining additional members. This resolution will be carried into effect at an early date, when it is hoped it will elicit a hearty and general response. In this connection it may be usefully pointed out that the principle involved in this tentative scheme is not new, but one that commands only a too limited practice. Its application in the direction of securing nominations for membership is commended to every member of the Conference. It is a pleasure to your Committee to supplement the announcement made last year of the resignation of Mr. A. H. Mason, F.C.S., as honorary secretary for Canada, by the further statement

of the Bell and Hill Fund, a step necessitated by the conversion scheme of the Government.

Mr. Louis Siebold, F.I.C., F.C.S., was last December reappointed editor of the Year-book. The manuscripts of Parts I., II., III., and IV. of the 1889 volume is now in the hands of the printers.

It is the painful duty of your Committee to report officially the death of Mr. John Williams. Five years ago he honoured our Association by his occupancy of the presidential chair, and for three consecutive years he filled the office of President of the Pharmaceutical Society of Great Britain. To the latter body and the Conference he was a liberal contributor. Mr. Williams in his career supplied added proof of the possibility of a practical pharmacist being also a sound chemist. He was possessed of a kindness of disposition, the depth of which only those could form an approximate estimate of whose privilege it was to know him intimately, whilst he was also unobtrusively generous, a characteristic which induced him to impart freely knowledge which had taken him long years of patient toil to acquire.

The number of notes and papers which have been received for this meeting is larger than in any previous year since



THE LIBRARY.

that Mr. Joseph Bemrose, F.C.S., of Montreal, Canada, has consented to act as his successor.

In order to assist willing workers in the choice of suitable subjects requiring investigation, the familiar Blue List has been subjected to a painstaking and extensive revision. It is gratifying to find that of the papers to be read at this meeting a not unimportant proportion afford proof of the indebtedness of the authors to the suggestions therein contained. That the number is not larger may be reasonably attributed to the shortness of the interval between its issue and the present gathering.

The absence during the year of any application for a money grant in aid of research is a subject of regret. Your Committee would improve the occasion by reminding capable contributors of its readiness to provide funds to assist in defraying the cost of materials connected with the conduct of original researches suitable for reports to Conference.

The Committee of the Unofficial Formulary has, through its chairman, reported to the executive committee that the work it has in hand has not reached a sufficiently advanced stage to justify a recommendation for its publication this year.

The honorary treasurer of the Conference, with the sanction of your Committee, has effected a change in the Consols

1885. From the standpoints of usefulness and suitability they fulfil, in an admirable degree, the scientific requirements of the Conference. Among the contributors are to be found old friends whose productions are ever welcome, and these will join heartily in the congratulation due to the fact that several of the papers represent maiden presentations to the Conference—a circumstance which augurs well for its future.

The reception last evening by the President and officers of the Conference, and the conversazione which followed, may be pronounced not only a well-deserved but a brilliant success.

Your Committee cannot conclude its report without a reference to the loss the Conference is about to sustain in the departure of its late senior honorary secretary to Melbourne, to undertake the responsible duties of Director of Chemistry and Pharmacy in the school of the Pharmaceutical Society of Australasia. It congratulates Mr. Plowman on his appointment and elevation, and is assured that the best wishes of every member of this Conference will accompany him to his new sphere of labour. It also feels, in wishing him health and success, that he will do much by his presence and personal endeavour towards strengthening the attachment to this Conference of our fellow-members in Victoria, which he successfully initiated five years ago.

Mr. MARTINDALE then read

THE FINANCIAL STATEMENT,

to which Mr. J. Wilson (Bath) and Mr. T. Rheedder (Newcastle-on-Tyne) had attached their names as auditors. It showed that the net income of the year, exclusive of outstanding balances, was 698*l.* 9*s.* 7*d.* The net expenditure was 781*l.* 0*s.* 8*d.* The principal sources of income were as follows:—

	£ s. d.
Year-book (sales, &c.)	127 17 3
Subscriptions	538 10 4
Unofficial Formulary	30 12 0

The expenditure included the following items:—

	£ s. d.
Year-book (cost of production)	491 4 0
Unofficial Formulary (ditto)	26 19 6
Salary and expenses	70 0 0
Printing, postage, &c.	53 19 4
Liabilities of last year	138 17 10

The statement also included a report of the Bell and Hill Fund, which consists of Consols amounting to 360*l.* This fund exists for supplying local associations with a present of books. Bath received books to the value of 10*l.* 12*s.* 6*d.*, and during the year there was a further payment out of the fund of 7*l.* 15*s.* 6*d.* to cover the difference between 350*l.* 3 per cent. Consols sold, and 360*l.* 2*½* per cent. Consols purchased.

Mr. MARTINDALE added that the printed copies of the balance-sheet showed a total of 3*d.* less than the figures would add up; but he could assure them that the written copy was correct, and the printed ones contained a blunder.

Mr. RHEEDER (auditor) vouched the accuracy of the accounts.

On the motion of the PRESIDENT, seconded by Mr. ALLEN, the report and financial statement were accepted.

Next, amid a storm of cheers, Mr. Umney rose and delivered the

PRESIDENT'S ADDRESS.

It was at Newcastle, after the meeting of the British Association in 1863, that a few leading pharmacists met, with the object of inaugurating an annual Pharmaceutical Conference.

RETROSPECTIVE.

At this first meeting the desirability of having at intervals an opportunity of conferring upon matters of interest and importance to pharmacists was shown, and it was thought that a stimulus to intellectual exertion would be given by the prospect of periodical gatherings, and that many who had time and opportunity for research would be induced to contribute papers, while the majority when associated would look forward to an annual gathering as an opportunity of good fellowship.

We are indebted to Schacht for the idea of our annual Conference; to Atfield, Brady, and Reynolds for our excellent organisation; and to the indefatigable secretaries for the success of our annual meetings through a series of years.

Reference to the list of members who have been called to the presidential chair reminds me not only of the honour you have done me in electing me to this office, but fills me with misgivings lest I should unworthily occupy the post which has been so ably filled by my predecessors.

It is to be regretted that death removed some of our Presidents while capable of active work, but gratifying to know that their labours live after them, and that their published researches are ornamental to our "Year-books of Pharmacy" and of great practical value to medicine and commerce.

Presidents Deane, Hanbury, Stoddart, Southall, and Williams took the greatest interest in this Conference; and other Presidents who are happily among us to-day, as well as those that are absent, are still in sympathy with this Association and its objects.

We who have seen the "blue ribbon" that it is customary for the Royal Society to confer on workers in science given to some of our past Presidents have reason to feel proud of the distinction conferred upon pharmacy through them.

ON OUR NATIVE HEATH.

Your late President, when speaking at Bath of the "silver wedding" of the Conference, had a most felicitous topic. I am fortunate in having what should prove an attractive occasion—one, indeed, which should enlist an enthusiasm equal to that of last year's meeting—arising out of the fact that it was in this very town twenty-six years ago that the British Pharmaceutical Conference had its birth—

Breathes there the man, with soul so dead,
Who never to himself hath said,
This is my own, my native land!

The Conference, as you are aware, has met in many important cities and towns in England, Scotland, and Ireland, and on this occasion we are responding to an invitation given twenty-six years ago, when Brady expressed his satisfaction that Newcastle had had the privilege of receiving the first meeting of the Conference, and promised a hearty welcome whenever its members were again disposed to visit his town.

Those good friends I see around me to-day evidently had not forgotten the past, and thus it was that at Bath their colleagues said that "the heart of Newcastle beat with parental affection to the Conference," and, as if to remind us of the geographical position of their town, and to entice our North British friends to come over the Border, they said—

Better loved ye canna be,
Will ye no come back again?

CHOOSING A SUBJECT.

The subjects upon which my predecessors have addressed you have been most varied. Some Presidents reviewed researches in those sciences having a direct bearing upon pharmacy which had been published during their year of office, others spoke to you upon pharmaceutical ethics and politics, some upon revision of the British Pharmacopoeia, while others directed your attention to the study of some particular science, upon which they spoke as experts.

In casting about for a topic upon which I might address you, I came to the conclusion that one of the articles of association of the British Pharmaceutical Conference agreed to in this town in 1863, viz., "That one object of the Association should be to maintain uncompromisingly the principle of purity of medicine," would not be an inappropriate theme on which one might say something concerning our everyday life that would lead to fresh lines of thought and such a modelling of our ideas and actions as might tend to make us more accomplished pharmacists and not less successful men of business.

THERE WERE ALWAYS ADULTERATORS.

In the days when sophistication was rampant there were to be found a few, at any rate, who prized the judicious selection of substances for use in medicine. That the choice was not always used and approved by the physician is shown by the history of the conflicts between physician and apothecary as far back as the reign of Henry VIII., when physicians were empowered to "search, view, and see the apothecaries' wares, drugs, and stuffs," and to destroy such as they found unfit for use. This power eventually passed from the hands of the physicians to the Society of Apothecaries, who separated themselves from the grocers, with whom they were by charter incorporated, and against whom they made bitter complaints on account of the frauds that the latter would persist in practising.

To remedy this evil, in the year 1623 the Society of Apothecaries founded an institution for the purpose of making some of the most important preparations for the use of their own members, and although at first operations were on a small scale, being confined to the manufacture of a limited number of preparations, their products were gradually increased both in number and quantity, and eventually we find, two centuries later, this institution in the foremost rank as producers of medicines of a high standard of purity.

The medicinal compounds in vogue in the seventeenth century were chiefly empirical nostrums or mixtures of substances some of which neutralised others, and compounding prescriptions and manufacturing medicines were carried on without any reference to scientific principles. While it is true that prior to the organisation of the Society of Apo-

carries two editions of the London Pharmacopœia were published, still the science of chemistry had so little advanced that it was not until about the time of the tenth edition of the London Pharmacopœia that there was any real knowledge of manufacturing pharmacy.

The signs of the times were not without their lesson to some keen business men in the early part of this century, for it became obvious that traffic in drugs, whether in the condition as imported, powdered, or manufactured into galenicals, might in the future be more successfully carried on by due regard being paid to purity.

TRYING HONESTY.

There was a new departure, and London wholesale druggists were not handicapped in their start, for their city was the drug market of the world, and the importation and sale of raw drugs had given them great experience and pecuniary profit. The dissatisfaction of the compounders of medicines no doubt gave rise to this new departure, for the continued complaints of the physician made them aware that for anything other than crude or garbled drugs but little reliance could be placed in the wholesale druggist; and thus it was that, notwithstanding mechanical appliances were vastly improved for pulverisation and other processes, the dispenser had to produce his powders by pestle and mortar if the physician's prescriptions were to be reliably dispensed.

Now in those days it was the practice of the wholesale druggist to send his drugs to a drug-miller, who, it is to be regretted, was not so scrupulous of the purity of his products as are the firms who carry on similar businesses to-day; and it is certain, moreover, that the wholesale druggist set a bad example to the miller, for it was not an uncommon practice (as I was once informed by a wholesale druggist who was in business at the end of last century) to send comparatively inert substances to the mill to be ground and mixed with potent drugs.

Early in this century guaranteed powdered drugs were introduced in trade by Thomas Herring, who claimed that his soft, impalpable, bright-looking vegetable powders were as pure as the unsightly powders that compounders were then producing by pestle and mortar.

Others followed upon parallel lines with marked success, and the good example of several well-disposed men striving for excellence was one of the important steps which have been instrumental in producing the purity, uniformity, and perfection so generally to be met with in the powdered drugs of to-day.

CHEMICAL REMEDIES.

Compounded medicines at this period consisted largely of galenicals, and notwithstanding chemical substances were

used in medicine, their preparation was imperfectly understood.

Chemical science, it is true, had already started on its triumphant march, for Phillips, when reviewing the Pharmacopœia of his time, wrote most ably thirty pages upon the preparations of antimony.

Tricks were resorted to in the adulteration of simple chemical substances, which leaves but little doubt that, notwithstanding there was a want of chemical knowledge and manipulative skill, there was no lack of deliberate intention to defraud.

The success attendant upon the production of pure powdered drugs was an incentive to some of our historic houses, and it came about that not only were chemical substances prepared with due regard to their medicinal purity on a larger scale than heretofore, but organic novelties, such as quinine, morphia, strychnia, which were now

finding uses in medicine, were produced on a manufacturing scale of a purity which, considering the chemical knowledge of the manipulators, was highly creditable.

For half a century prior to our first Conference a gradual but steady advance in the direction of purity for medicinal substances was made, and the pharmacists of 1863 did not fail to take cognisance of this; moreover, they saw that the sphere of their labours was being constantly enlarged, and if pharmacy in the future was in any way to be a credit, then their work as chemists and pharmacologists must be unceasing.

ABOUT PHARMACOPEIAS.

Since the first Newcastle meeting the rival Pharmacopœias of London, Edinburgh, and Dublin have been fused into a national Pharmacopœia. This has been advantageous in helping forward and maintaining uniformity and purity in medicine. Those of us

who have been in harness during the publication and use of three or four pharmacopœias know the effect a well-revised edition has upon the commercial standard of crude and manufactured drugs.

The British Pharmacopœia, 1885, is an excellent type of what such a book should be, for it adopts a standard that ensures efficiency, and does not attempt to introduce rare and exceptional quality that is only occasionally obtainable, to the exclusion of that which is to be had of uniform excellence without difficulty.

There is, perhaps, no work upon which an expert has to use his judgment with so much tact and skill, so that he may keep both in touch and tune with the medical profession, the pharmacist, the drug merchant, and manufacturer, as when he is called upon to edit a national pharmacopœia. He may be misled by statements based on imperfect information or defective manipulation, and he cannot in all cases obtain facilities for checking the accuracy of published



MR. CHARLES UMLEY, F.I.C., F.C.S.

President of the British Pharmaceutical Conference.

results. The suitable editing of a pharmacopoeia becomes apparent when the editor, knowing the requirements of the medical profession and the capabilities of pharmacists and manufacturers, adopts standards and frames "characters and tests" which are acceptable to all concerned, and this without in any degree imperilling that principle which this Association has at heart, viz. to maintain, without compromise, the purity of medicine.

Pharmacists should do all in their power, not only when in their own business premises, but also in their public and private capacities, &c., to impress upon the public that household remedies should invariably be purchased of a similar strength and quality to those medicines physicians direct to be used in compounding their prescriptions.

If pharmacists would thus aid in educating the public they would rid themselves of much outside competition in which weaker and inferior preparations are sold in lieu of the preparations of a higher standard vended by themselves; and this might be done quite apart from the question as to whether, legally, it is compulsory to retail British Pharmacopoeia preparations or not.

Is it not also desirable that pharmacists should co-operate with the Medical Council in their desire to make the British Pharmacopoeia preparations legal for sale, and those of old pharmacopeias obsolete and illegal? In my opinion it is most desirable.

THE LAW AND PURITY OF MEDICINES.

The Sale of Food and Drugs Act has materially aided in maintaining and advancing purity in medicine.

As a rule it is a thankless and almost hopeless task to make communities good by Act of Parliament, and often-times the striving of the few will act more beneficially as an incentive to the attainment of a higher standard than any coercion that can be devised. There is a residuum, nevertheless, holding either different or no definite views, that prefers not to take action unless under compulsion.

This must have been true in reference to traffic in medicines in the past, or "drugs" would not have been tacked on to the Sale of Food Act and our business signalled out as one in which it was necessary that supervision should be exercised for the public good.

The working of this Act, in so far as it concerns the drug trade, has not been without friction, due in many cases to the imperfect knowledge of officials, but the novelty now having passed away, and the superabundant zeal toned down to a reasonable pitch, only those cases are heard of which indicate fraud on the public. One often wonders when one reads of the number of samples of drugs that have been purchased for chemical examination, most of which seem to turn out satisfactory judging from the absence of prosecutions, whether in all districts the analysts are so conversant with the characters and tests and commerce of drugs as to enable them to efficiently test substances submitted to them or to advise the authorities when prosecutions should be unflinchingly carried out or not instituted.

The highly-trained pharmacist has neither sought nor obtained the post of public analyst in anything like the number of instances he should have done.

It may be that, notwithstanding his acquaintance with pharmacy, he lacks chemical and microscopical skill. If this be so, more complete instruction should be given in these subjects, and students should give themselves up to systematic work for a period of two or three years at least, otherwise they cannot expect to become competent to fill the post of public analyst.

Possibly the clause in the Sale of Food and Drugs Act which provides that no person shall be appointed as analyst for any place who shall be engaged, directly or indirectly, in any trade or business connected with the sale of food and drugs in such place has prevented pharmacists from seeking the appointment. Obviously they are at a disadvantage, as compared with professional men, under this regulation.

Surely there cannot be two opinions upon the desirability of impressing the public that the trained pharmacist is not on the same dead level as the traders with whom he is surrounded, and with whom, in selling simple commodities, he has, unfortunately, to compete.

Could any better indication of the superiority of his training and a fitness for the confidence of the public be found than his appointment as public analyst?

The public is not slow in taking note, and would not fail to observe that similar appointments were held by medical practitioners, and such observation would in due course necessarily tend to the better recognition of the pharmacist as an educated man, for whose superior knowledge, even in trading, it would rather pay an extra fee, as compared with the drug grocer, who had no information to part with.

It is none the less true now than it was at the commencement of this century, that in order to guarantee one's manufactures there is nothing compared with the simplicity of producing them for oneself.

THE EXCISE AND THE MEDICINE TRADE.

The regulations with which the Excise have surrounded our manufactures, and which are unequalled in number and stringency in any country in Europe, have been thought necessary in the past, in order that the duty upon alcohol may the more easily and accurately be collected. This impost has produced a depressing effect upon the manufacturing pharmacy of this country, which cannot have advanced either the purity of medicine or our position commercially.

For England to have been compelled to purchase in the markets of Germany her alcoholic medicinal preparations which the exigencies of her trade required should be exported in bond to her colonies and elsewhere was most humiliating. We were more to blame than those who continued this part of our fiscal system, inasmuch as we submitted to the yoke for years without complaining or moving in our own interest; and, as a matter of fact, until recently the authorities were not aware that the manufacturer of medicines had any grievances to be redressed.

Happily within the past year, on account of the broader views prevailing and the interest taken in our work by the practical men at the head of the Inland Revenue department, there has been an amendment, and the Excise regulations which so trammelled us in the past have now to some extent been removed, and at last there is an opportunity of producing most of our alcoholic medicinal preparations, with permission to export them under suitable drawbacks. These concessions will be of commercial value, and the manufacturing pharmacist will have an opportunity in the future of guaranteeing that his products are what they profess to be, and the standard of purity in medicine will thereby be legitimately maintained and advanced.

The Board of Inland Revenue has taken a good work in hand, and it must not look back.

England produces chloroform, ether, and other substances from alcohol without opportunity of competing with Germany and other countries, for the Excise take no account of the heavy pecuniary loss entailed in manufacturing such liquids from duty-paid alcohol, and give no rebate either for loss or for duty to the manufacturer on exportation.

Why England should be driven to Germany and elsewhere for so many of its alcohol derivatives, of which hydrate of chloral is an excellent type, and why alkaloids, as atropine, veratrine, aconitine, and a legion of other preparations, should be imported, to the detriment of our trade and the demoralisation of our rising chemists and pharmacists as manufacturers, I cannot conceive.

In my opinion, alcohol free of duty for medicinal purposes, or some facility to work with pure alcohol under supervision, is a most serious and urgent necessity. We are surely all desirous that we may not continue mere purveyors of potent remedies, but that we may be producers also, with a complete knowledge of the products we handle, whether as dispensers or traders.

There should be no attempt in the direction of obtaining concessions from the Inland Revenue that are impracticable. The department has recently shown a desire to aid rather than to hamper our manufactures, and there must not now be permitted, even if it should be wished, any lethargy or retrograde movement. Did not Germany for years take tea (valueless for dietetic purposes) out of our bonded warehouses without paying duty, and extract caffeine therefrom, selling it to the world, England included? and has it not been from recent concessions of our Customs authorities that we (thanks to the agitation of a shrewd business man) are now in a position to manufacture caffeine as advantageously as our Continental opponents?

RESEARCH AND BUSINESS.

The late President of the Chemical Section of the British Association referred at the Bath meeting to the decline of chemistry in this country. While I am not in a position to give an opinion on this subject as a whole, I fully concur in Professor Tilden's views in so far as the study of chemistry and its application to the manufacture of substances for use in medicine is concerned.

If one seeks the reason why in medicine this has come about, when a generation ago England was quite abreast of other nations in the production of inorganic and even organic medicinal substances, one can only come to the conclusion that something must have militated against advancement.

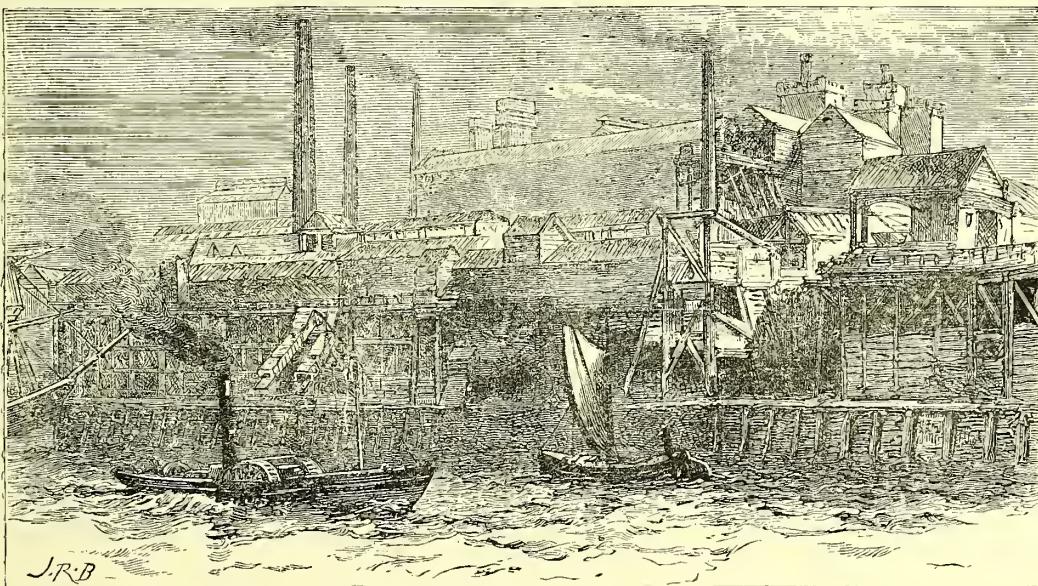
In my opinion two causes at least have been at work, viz. the stringent regulations with which we have been hemmed in by the Excise, and the meagre opportunities of education in research that have, up to a very recent date, been afforded in this country.

Our historic drug houses, who have always acted more or less as manufacturers, have, much to their own detriment, neglected research. Each establishment should have had its chemist engaged in the chemical examinations of new remedies for the discovery of active principles, &c., which

the House of Commons, our universities, and elsewhere, would co-operate to obtain pecuniary aid in furtherance of our object, and it is not at all likely that our rich City Companies, who do so much for education, endow scholarships, and vote funds for special researches connected with medicine and surgery, would stand aloof.

One would imagine, if one did not know to the contrary, that we were all agreed upon the desirability of a good scholastic and scientific education, backed by business training, for those who practise pharmacy. In my opinion no simpler method can be devised in aiding pharmacists as a body to maintain the excellent principles of this Association than this thorough training, accompanied by the higher education of some in its ranks in research.

It is quite certain that the pioneers of the British Pharmaceutical Conference had not two opinions on this point; and while it is true that few of the black clouds which threaten us as a trade to-day had gathered in their time, still the path is now, as then, in the direction of education, and I hold that our juniors must have every facility for such a training and thorough education in all those sciences having a direct bearing on pharmacy as will enable them to take up their proper position with the medical profession and the public.



NEWCASTLE CHEMICAL WORKS.

must have tended to have kept us out of the arms of foreigners for most of our alkaloids and other organic substances now in such increasing demand in medicine.

Manufacturers may state that, had men educated for such purposes been forthcoming, they would have gladly embarked capital with the objects of research and manufacture in view, rather than have remained apathetic. And to some extent this is true; in the future, however, such an excuse ought not to hold good, inasmuch as the Pharmaceutical Society has at a considerable cost equipped a research laboratory which should before this century closes produce many men competent to undertake research and manufacture.

There should be no lack of students in the Society's research laboratory; applications should outnumber vacancies, and men when trained need have but little fear of a demand for their skilled labour.

The Pharmaceutical Society has not unlimited funds, and its moneys cannot all be spent to aid research, but "ways and means" would be no barrier if men were forthcoming.

Let this laboratory be in such demand that there be no vacancies, and the research of such a nature as to be of benefit to medicine and pharmacy, and I have but little doubt that the good friends who honour us by delivering annual addresses to our students, and who hold positions in

It was not required of the men who met at Newcastle in 1863 that they should prove their qualification by the possession of the Pharmaceutical Society's diploma. In those days there were no compulsory examinations, as you are aware.

Examinations are not an unmixed blessing, subject, as they are, to no inconsiderable abuse, and the craze to pass examinations against time has created a state of things which may in the end prove anything but a boon to the pharmaceutical body of the future. It is to be feared that if the students of to-day were asked why they studied, by far the larger proportion would be bound to acknowledge that they were only occupied in cramming into themselves in the most rapid and easy fashion the minimum amount of information that would help them to pass their examinations.

One cannot help regretfully remarking upon this abuse of education and the failure of the majority to thirst after knowledge for its own sake.

MAKING SCIENCE PAY.

When one reminds the average modern student that "knowledge is power" he seems sceptical, and often replies that the information obtained in pharmacy is much too narrow in its scope to lead to reward, and he invariably treats with indifference statements that may be made in reference

to the influence that applied chemical and botanical knowledge has upon the world's commerce. He fails to grasp the lessons that are to be found on all sides, and only the thoughtful few are impressed when one gives palpable examples, with the object of proving the marvellous effect science has upon commerce.

The pharmacists of Newcastle can point with sorrow to a vast industry of the Tyne which has been partially dislodged and well-nigh ruined, solely as a result of applied chemical knowledge. I refer to the manufacture of alkali by the Leblanc method, and its present production by the ammonia process.

Since the time, also, when the Conference held its first meeting in this town, and at which period our supplies of cinchona were drawn almost wholly from the South American continent, what a change has come about!

Who could have thought, when botanists and planters experimented in Ceylon, the Nilgiris, and Java, that in less than one short generation we who at one time contemplated a cinchona famine should now be constantly heard to say, "Hold, enough"?

Are not these good illustrations of the working of science? Examples might be multiplied and men named to show that the able pharmacologist can leave footprints that extend not only to medicine but also to commerce.

Did not Daniel Hanbury make an indelible mark? Those who knew this past President of our Association are aware that "Pharmacographia," compiled, as it was, after years of laborious research (looked upon as a labour of love), has been not only a boon and a guide to students of *materia medica*, but a material help to those who grow, collect, ship, or import drugs; few publications have done more to aid that one object of this Association, viz. the maintenance of the purity of medicine, than this work of Hanbury and Flückiger.

CONCLUSION.

I regret my inability to address you upon topics with which you as dispensers of medicine are more immediately concerned; but as several of my predecessors have done this most ably, and as I from the nature of my business am only imperfectly acquainted with this aspect of pharmacy, I trust that this reference will be accepted as an apology for not having followed the beaten track.

I have passed in rapid review a few of the leading features connected with the purity of medicine during this century, and in my divergence to matters connected with or around the subject I have endeavoured to show what has been done spontaneously, and under coercion, and from force of good example, together with the commercial results of applied botanical and chemical knowledge.

Notwithstanding the divergence of the various paths over which pharmacy has been trodden during the last three-quarters of a century, most of the roads have finally led to one goal, around which there is one of the fairest portions specially and attractively laid out for the maintenance of the purity of medicine. We who are assembled on this pleasant and reputable spot to-day have gained more speedy access than we should otherwise have done had not steps on easy paths been thoughtfully hewn for us.

Let us not "rest and be thankful" for the small advance we have made, but rather use our position as a ledge upon which we may firmly plant ourselves, with a determination to advance to heights which without our present vantage-ground would have been inaccessible; and may we zealously toil to so maintain and advance pharmacy as to be worthy of those who at Newcastle, twenty-six years ago, founded the British Pharmaceutical Conference!

Mr. ATKINS said he rose to propose a very hearty and cordial vote of thanks to the President for the admirable, thoughtful, and instructive address which he had that morning delivered to them. (Applause.) It was highly important that on this historic occasion of their revisit to Newcastle they should have a president worthy of the occasion. He would not say as much upon that point as he would were the President not present, but he could say with propriety in his presence that they regarded him as a typical ideal pharmacist, a man who had a broad sweep of his subject,

with a knowledge of detail; a chemist, a pharmacist, a man of business, a man of boundless energy. Now, that he should have consented on that historic occasion to have accepted the post of President was indeed conferring upon them a great favour, and when they who knew the traditions of that Conference were aware that Charles Umney had consented to serve they felt that the traditions of the institution were safe in his keeping. (Applause.) He might tell those who did not know Mr. Charles Umney as well as some of those who did, that all along the line he had carried success. As an early student, as one connected with the Pharmaceutical Society for long years, he had, in its laboratories, in its museum, in its evening meetings, in its literature, conferred upon them a very large series of obligations. And when he came to the practical side of life he found that they as men of business were largely indebted to him. He had only to remind them that when he had observed, with entire self-effacement, that concessions had been obtained for the use of spirit for export purposes from the Inland Revenue that he had served them very largely indeed. (Applause.) And he might also remind them that on the Railway Rates Committee of the London Chamber of Commerce Mr. Umney had rendered assiduous and self-sacrificing service in the giving of his time and energy. (Applause.) Now, in regard to the address, he thought it was in the variety of topics treated, in the thoughtful résumé of the past, in the thoughtful investigation of the present aspect of science, education, and commerce, that they could not do better in regard to that address than thoughtfully to peruse it, and well weigh its suggestions. To the young men so largely, he was glad to say, represented there in that great gathering, it would be an incentive to follow in the steps which their President himself had laid down, and to those who were seniors it would be a subject of constant refreshment and pleasure to read that most cultivated and thoughtful address. He had great pleasure in moving that the most hearty vote of thanks possible be accorded to the President for his address. (Applause.)

Mr. T. MALTBY CLAGUE said it devolved upon him, as local secretary, and he was sure it was a very pleasant duty, to second the vote of thanks so ably put before them by their friend Mr. Atkins. He esteemed it a very great honour to have this to do, for to practical North-countrymen Mr. Umney was just the very man they wanted as President. (Hear, hear.) Mr. Umney, although a chemist of very considerable ability, although a pharmacist who had laid them under very great obligations, was intensely, also, a man of business; and in the assistance which he had given to the manufacturers of pharmaceuticals in the matters to which he, as Mr. Atkins said, with entire self-effacement, referred in his address, that assistance had been real. Rather accidentally he (the speaker) the other day came across a fact which struck him very significantly. The President, in opening his address, said it was in the year 1863, and in the town of Newcastle, that this Conference was established. It was in the year 1863, and in the town of London, that Michael Carteighe and Charles Umney stood bracketed together as prizemen at Bloomsbury Square. (Applause.) Since that Mr. Umney had never slackened rein. He had gone on, and had given them every year good work in pharmacy, and they North-countrymen were all glad to see him in the presidential chair, and to thank him for that very earnest and practical and sensible address which he had given to inaugurate their meeting that day. (Applause.)

Dr. BRADY, as senior Vice-President, put the motion, which was heartily carried.

The PRESIDENT, in response, thanked them for their remarks and for their patient attention to his address.

THE PAPERS AND DISCUSSIONS.

The first paper read was on

TINCTURE OF SENNA.

By B. S. Proctor.

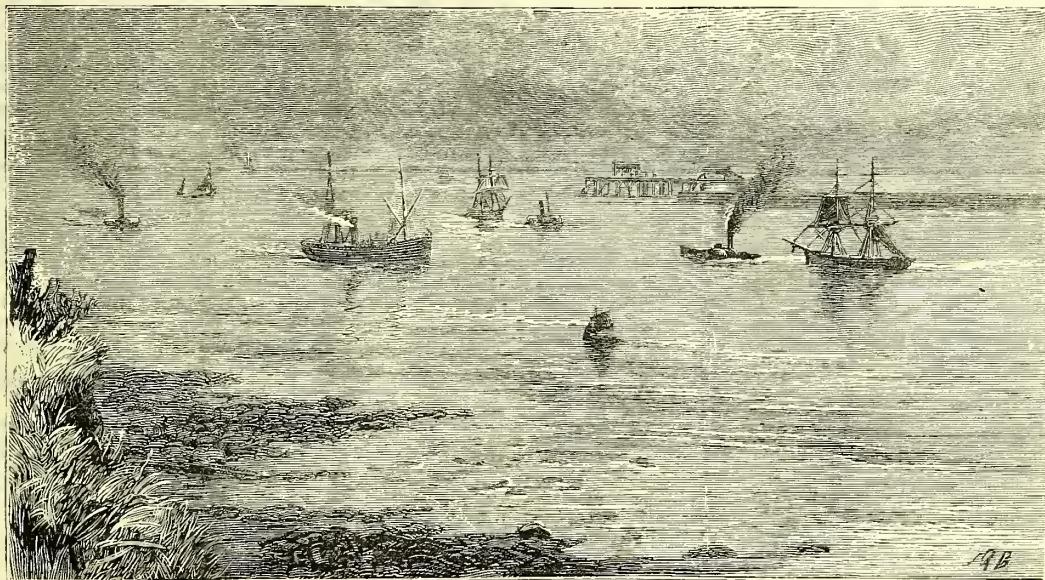
The author's object in bringing forward this paper was to get an expression of opinion regarding the activity, or otherwise, of this tincture. Some writers—such as Christison—seem to be under the impression that the cathartic principle of senna is soluble in alcohol, while Dragendorff and

Kubly clearly show that strong alcohol precipitates the colloid active substance. Other authorities were quoted, and, reading a few sentences, in which he tried to get at the bottom of the vagueness of those authors who speak of "strong alcohol" and "dilute alcohol," Mr. Proctor proceeded to describe in detail what he had done to test the activity of tincture of senna. A soft hygroscopic extract made from the rectified spirit percolate of $\frac{1}{2}$ oz. of senna was swallowed, and it produced no effect. The marc remaining was next made into a draught, with water, and "it produced pretty strong catharsis, with griping." Next he took as a dose 1 oz. of B.P. tincture of senna without any effect, and the author's temperance habits stood in the way of his taking it by the pint. (Laughter.) Owing to these experiments, in June, 1883, he made to the Pharmacopœia Revision Committee of the Medical Council the following suggestions (amongst others) for alterations of official formulae.

"*Mist. Sennæ*.—Omit the tincture of senna, which is inert, or substitute for it a further addition of tincture of cardamoms. See below, and 'Pharmacy,' page 370."

"*Senna*.—The tincture of senna is inactive and useless,

series of experiments on senna, and succeeded in isolating the active principle, but unfortunately he was some few weeks behind Dragendorff, and his priority was lost. He was rather surprised to hear that tincture of senna in proof spirit was so inert as Mr. Proctor said, because he found that with equal measures of rectified spirit and water he succeeded in extracting the active principle of senna very completely. The method he found to succeed best in obtaining the alkaline and earthy cathartates which formed the active principle of senna was by making a very strong tincture of equal parts of rectified spirit and water, and then adding to the tincture about an equal volume of rectified spirit. The cathartates were thrown down in a state of purity, and entirely free from odour. He could understand that the treatment of senna with rectified spirit would entirely fail in extracting the active matter, though it would be very successful in extracting the nauseous odour and taste, which were not necessarily attached to the active principle of senna, but were an entirely separate thing, and when it and the cathartates were thrown down the nauseous odour and taste remained in the supernatant fluid. He thought it would be unwise to eliminate the tincture of senna from the Pharma-



MOUTH OF THE TYNE.

the active matter being insoluble in spirit. See 'Pharmacy,' page 370."

"*Tinctures*.—Tincture of senna is inactive, and might be expunged."

These suggestions did not meet with acceptance, and accordingly, he now brought the subject before the meeting, so that others, by personal trial, might test the efficacy of senna preparations made with spirit, more or less dilute, and thus determine the question whether tincture of senna should be abolished or amended.

The PRESIDENT said that Mr. Proctor's paper related to one of those practical subjects for which that gentleman was so well known. He could hardly suppose that his hearers, even apart from their habits of total abstinence, would take the large doses of tincture of senna to which Mr. Proctor alluded, but he should be very glad if gentlemen would help them with some remarks on the subject. It was a subject that had been greatly worked on, and he should be glad if Mr. Proctor would tell them what kind of senna he had used to experiment on—whether it was Tinnevelly senna or Alexandrian senna, because he thought it was generally considered that Alexandrian senna was a more active variety than the other. That had, he thought, been shown a great many years ago by Mr. Henry Deane.

Mr. T. B. GROVES said that some years ago he made a

copœia. That would, he thought, be too radical a measure, and it would be far better to use dilute spirit, and adopt the other suggestion of Mr. Proctor, and use equal parts of spirit of wine and water. He thought the syrup was even a worse preparation than the tincture, and that it was practically inert.

Mr. DOTT expressed his surprise that Mr. Proctor had not referred to the paper which Dr. Ralph Stockman had previously given on the subject, especially as Dr. Stockman had worked on senna under the direction of Kubly, one of the authorities quoted. He had succeeded in isolating the cathartic acid, and by physiological experiments had conclusively demonstrated that it was the principle to which the action of senna was due.

Mr. A. BALL said he had recently made experiments with cathartic acid. He found that the acid was inactive. He had taken 8 grains of commercial cathartic acid without any result at all, but the cathartates he found to be very active. He further thought that in the ordinary tincture of senna cathartic acid was precipitated; there was not sufficient water to dissolve it, and not sufficient alkalies to form the cathartates. That in a great measure he believed accounted for the inactivity of the drug.

Mr. A. W. GERRARD said that as far as his experience went he did not altogether agree with that of Mr. Proctor. The tincture was used moderately in the institution to which he was attached, and he had never heard any complaint of

its action. That might be for want of observation on the part of those prescribing it. (Laughter.) However, he would say this—that they must have some idea that the official dose was not a proper one where a purgative effect was required, as doctors invariably ordered half an ounce for a dose. One feature in connection with this paper of Mr. Proctor's was that it had the effect of pointing out the necessity of having in their Pharmacopœia a greater variety of strengths of alcohol. They were very limited as to the use of solvents, especially as to the strength of alcohol. They had absolute alcohol, rectified spirit and proof spirit. In America they had a dilute alcohol containing, he believed, 45 per cent. by weight of alcohol, and the Americans used that dilute alcohol in a few cases where it was much better calculated to effect a solvent action on active principles than proof spirit did. He thought they might refer to that matter here because it might help them to obtain different strengths and more varieties of alcohol than they had at present in their Pharmacopœia.

Mr. WRENN said that Mr. Gerrard had anticipated some remarks that he intended to make. The drug had established a reputation for itself among the public, more especially in its aqueous solutions. He believed that a lower strength of alcohol than that which Mr. Gerrard suggested, say a spirit of 60 per cent. under proof, such as was almost universally used in the manufacture of concentrated infusions, would be found more suitable. The subject he supposed would come up again upon the discussion of the paper on infusion of gentian.

The PRESIDENT said that the remarks of Mr. Gerrard were very practical. There could be no question they had been following the rule of thumb very much during the last two or three hundred years in their Pharmacopœia in regard to the strength of alcohol, and he thought the suggestion made by Mr. Gerrard a very good one. It was very probable that a mixture of half rectified spirit and half water, or spirit of 20 per cent. under proof, would be a proper spirit for making tincture of senna, but it should not go forth from that Conference that they recommended tincture of senna to be immediately made in that way, because they might find themselves clashing with the Excise and the public analysts. But the matter should be settled without delay. He was sure that if they took a leaf out of the American practice in that respect it would be to their advantage. It remained for them to thank Mr. Proctor for his paper.

Mr. PROCTOR, in replying, said he did not by any means wish that what he said should be taken as a settlement of the question. He should rather look upon it as the opening of the question. He did not consider that the half-and-half spirit which had been spoken of by himself in the first instance, and followed by Mr. Groves and others, should be taken as the right strength of spirit for exhausting senna. His impression was that the right method probably would be to make pressure-extract first with water alone, to add to that strong aqueous solution as much spirit as would throw down the active principle, and then after filtration to use that instead of their present tincture of senna. He should have been disposed himself to have experimented upon some of these lines, but he felt that it was someone else's turn; he had done his share. Gravely and sorrowfully remarked the speaker, "Gentlemen, I have taken about twenty of them." (Laughter.) I have experimented upon aloes and scammony, and rhubarb and senna—(laughter)—and rhamnus frangula and rhamnus purshianus—and I have suffered." (Renewed laughter.) He would suggest that the Formulary Committee should undertake the experiments. If they would take the doses he would make the drug—(laughter)—and if they would not take the doses he should drop the question. (Hear, hear.) As regarded what Mr. Dott had said, he considered that his object was to get the active principle into solution, whatever it was, and leave theory out of the question. He thought that the Pharmaceutical Conference was perhaps rather too much given to the refinement of chemistry, when a practical result was the important thing with them. They were so long in settling the theory that they lost the practice. Let them get a practical result first, and let scientific men take their time to discuss the scientific question. As regarded the activity of different kinds of senna, he had not any experience to offer. He thought Christison, who was a practical man, said that the Tinnevelly was quite equal to the other; but while the doctors differed he tested the purgative effect of the senna

which he operated upon, and, if it was satisfactory, he cared not whether it was Tinnevelly or Alexandrian. He agreed with Mr. Gerrard that there were many things in the Pharmacopœia which might be treated advantageously with weaker spirit than they used at present.

The PRESIDENT said that for the convenience of some of the gentlemen present they proposed to vary the order in which the papers had been set down, and would now take No. 28 on the list, instead of No. 2.

This was on

PAPAIN AS A DIGESTIVE AGENT COMPARED WITH COMMERCIAL PEPSINES.

By A. Ball.

Papain, or papayotin, as supplied commercially, is of a brownish-white colour, sometimes free from smell, at others possessing a peculiar odour, similar to that of indol. Commercial papain is prepared from the juice of the leaves and fruit of the *Carica papaya*, L. (*Papaya vulgaris*, D.C.). It is stated to have been indigenous to the American continent, although it is now found in the tropical parts of Asia and Africa. The fruit is edible, and the bruised leaves of the papain possess the remarkable property of causing tough steak, when wrapped in them for a few hours, to become tender, the proteolytic ferment causing separation of the muscular fibres. Papain is usually prepared from the milky juice, fresh or dried, by solution in water, and subsequent precipitation of the papayotin with alcohol. The purity depends upon the number of times the process is repeated; the whiter samples appear to possess the highest activity. The author reported on three samples obtained from different quarters which had been tested for digestive power.

Sample A: White; slight odour. Five grains were placed in 4 oz. of a 1-per-cent. per volume of hydrochloric acid in distilled water, to which was added 100 grains of finely divided fibrin obtained from rump steak, the whole kept at a temperature of 110° F. in a water-bath for three hours; digested 60 grains of the fibrin. Sample B: Yellowish; peculiar odour of indol; subjected to same test, digested 44½ grains of fibrin. Sample C: Light brown colour; distinct odour; subjected to the same test, digested 22 grains of fibrin.

The experiments were repeated with 100 grains of coagulated egg albumen, carefully cleared of yolk, and passed through a fine sieve. An acid solution, as above, was used containing 1 grain of papain, and the whole kept at a temperature of 100° F. in a water-bath for three hours. Sample A dissolved 94 grains, B 80 grains, C 30 grains. With the curd of casein, obtained by adding an acid to milk, the relative power of the three samples was even more marked.

When albumens are acted upon by papain in an acidified solution, the dried residue obtained by careful evaporation of the filtered solution does not appear to be readily soluble in water, and when mixed with water and placed upon a membranous dialysir floated on water, this product, unlike peptones obtained by the digestive action of pepsine upon proteids, does not appear to be in the least degree diffusible, but diffusion commences directly the solution is acidified or rendered alkaline. In this respect it may be more nearly allied to the globulin series.

The proteolytic test for pepsin, prescribed by the British Pharmacopœia, viz., 2 grains of pepsin with 1 oz. of distilled water, to which 5 minims of hydrochloric acid have been added, forms a mixture in which at least 100 grains of hard boiled white of egg passed through a wire gauze sieve of 36 meshes per linear inch, will dissolve on their being well mixed, digested, and stirred for about thirty minutes at a temperature of 130° F., Mr. Ball thinks too easy. He suggests that the test should be 1 grain to digest 500 grains of coagulated albumen in the same acidulous medium, as he has found 1 grain of the best pepsins in the market will digest from 500 to 1,500 grains when subjected to the prescribed conditions. He is at a loss to understand why pepsins containing a variable amount of milk sugar, starch, or peptones should be the only ones made official. When a physician orders pepsin, he means pepsin of the highest digestive power, and most likely to give satisfactory therapeutic results.

Mr. Ball experimented with six samples of the various

pepsins in the market, and by using 1 grain of each the following results were obtained respectively : No. 1 digested 1,308 grains; No. 2 digested 1,200 grains; No. 3 digested 1,105 grains; No. 4 digested 430 grains; No. 5 digested 430 grains; No. 6 digested 103 grains. Of two samples of papain, 1 grain of the first digested 980 grains, and 1 grain of the other digested 108 grains. In each case 5 oz. of distilled water containing 1 per cent. by volume of hydrochloric acid was used, to which 2,000 grains of coagulated egg albumen were added, and the whole kept at 100° F. in a water-bath for three hours. The difference of apparent activity in the papains is accounted for by the increased surface presented by the particles of albumen.

The different proteolytic action upon finely-divided fibrin obtained from lean rump steak was shown by the exhibition of bottles, in which the undigested fibrin was seen by the sediment in each bottle.

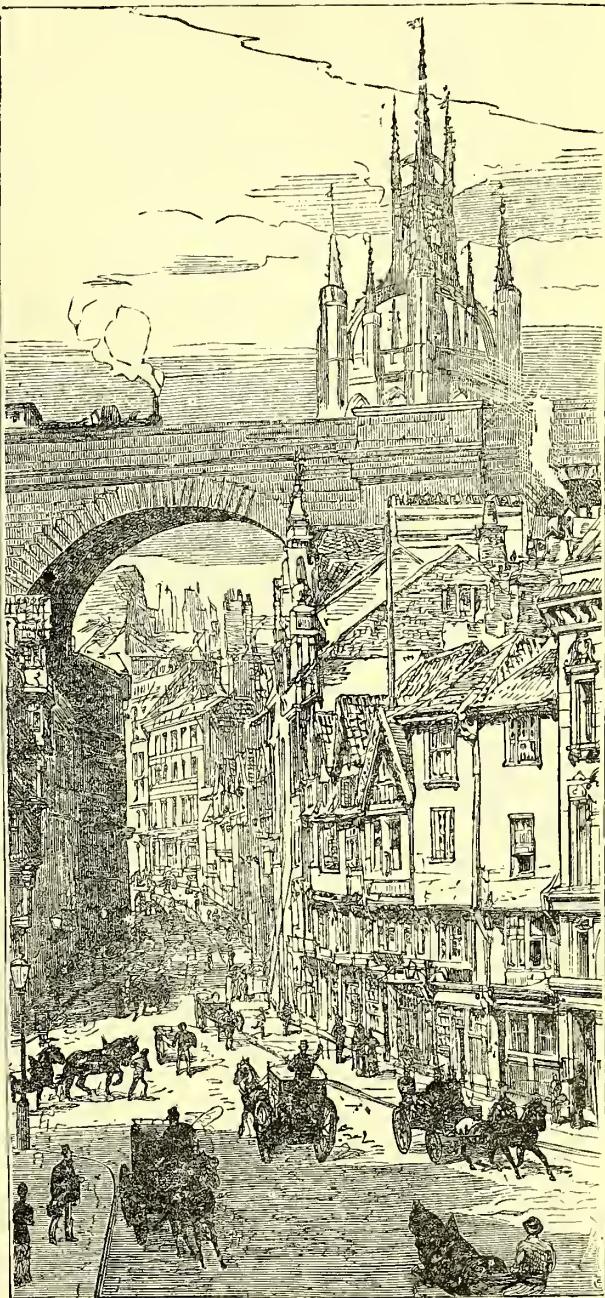
Mr. Ball considers that fibrin is the most reliable test for pepsins, and he also argues that the activity of a digestive ferment should be estimated by the amount of pure peptones actually obtained; that is, peptones perfectly soluble and diffusible, the diffusibility being the chief test. If the solution is placed upon a membranous dialyser floated upon distilled water, the whole of the peptones will dialyse through the membrane. The product from papainised fibrin will not dialyse through. This further goes to prove that it does not wholly digest the fibrin, whether in acid or alkaline media, but its action renders it more easily digested by the natural ferments.

The activity of pepsin is doubtless due in a large measure to the method adopted in its manufacture. The best pepsins are prepared by extracting the ferment from the secreting membrane through maceration with glycerine, but it is an impossible process, except to experts; the solution is difficult to filter, scale, and pulverise, and, finally, to obtain from it a pepsin free from albuminous matter. Physiologists obtain a little pure pepsin experimentally by the employment of alcohol as a precipitant, allowing the membrane to stand in alcohol, and then extracting the ferment with glycerine. This process is extremely unreliable, as strong alcohol exerts an injurious action upon the ferment. Another method is to precipitate the pepsin with salt; the magma which separates floats upon the macerating fluid, and is largely impregnated with salt. This is partially removed by expression, and by allowing the salt to effloresce upon the surface of the expressed magma cake. The entire purification can only be obtained by dialysis, and this washes away a good quantity of the ferment itself; therefore the process is not recommended for commercial use. Moreover, should the product not be absolutely free from salt, it is unfair to place it upon the market as a pure pepsin, when the purchaser would be paying so much per ounce for salt.

There is another process to prepare what are termed peptone-pepsins, in which the living membrane of the stomach is subjected to acidulous digestion with heat, when the whole tissue in which the pepsin is secreted is converted into peptone. The acid is precipitated in the form of a salt and the syrupy solution of peptones and pepsin clarified and reduced to a dry form by this method, a larger yield is obtained; consequently it can be supplied cheaper, the activity being reduced in the same ratio.

Scheffer's method is to precipitate the pepsin from solution in the form of a magma with salt; the whole is then expressed, and, while containing a certain proportion of salt and moisture, is mixed with milk sugar; the paste, spread upon a glass plate, is dried, and then ground to powder. The best sample of this does not appear to contain more than 5 per cent. of pure pepsin. The experiments of Dr. Pavly in 1863 went to prove that numbers of pepsins then in the market were absolutely useless, some of the samples being absolutely incapable of digesting meat fibrin. Lastly, the author mentioned that a simple test of the freedom of pepsins from mucus, peptones, or added starch is an absence of sticky coagulation when exposed to the atmosphere.

results had been almost negative. He had tested them in alkaline, acid, and neutral solutions, especially with white of egg, and the specimens he had tried had very little action indeed. Of course it was well known that pepsins differed very much. Anyone could easily test those in the market by the Pharmacopœia method, which seemed not to be very perfect, but was extremely easy. A good deal of time was saved by testing it at a temperature of 120° to



DENE STREET.

130° F. He put the different samples of pepsin with the albumen into his acid solution, contained in test-tubes heated by a beaker of water, and in ten minutes he could see which was the most active, because they could see very easily without weighing the undissolved albumen which was the most active pepsin. When fibrin was used the test was not so easy as with white of egg, because the solution was opaque. Pepsins, of course, differed very much. Every body present who had ever tested the pepsins of commerce

The PRESIDENT said Mr. Ball had photographs showing the amount of undissolved albumen in a series of half-a-dozen bottles. [These were handed round the room.]

Mr. F. B. BENGER said he had experimented with papain at different times, out of curiosity, and he must say his

must have found that out. Some of them possessed no activity whatever, whilst others were extremely active. If a large quantity of acid solution was used an active pepsin would dissolve a very large quantity of white of egg or fibrin; and, therefore, the statements made sometimes in advertisements that one kind of pepsin would dissolve so much white of egg meant almost nothing, because they did not state the other conditions under which it acted.

Mr. SCHACHT asked if any gentleman could tell him the best way of determining whether the addition of pepsin to white of egg resulted in the formation of a peptone or not. Dissolved albumen was not necessarily peptone, and the only apparently available means of determining the proportion of peptone was by dialysis; but that was a very troublesome and awkward process to go through, and he would be glad to know a more readily applicable test. Fehling's solution gave colours and so forth, but he had not seen any process which readily decided whether the solution contained real peptone or merely soluble albumen.

Mr. NAYLOR said the point in the paper in which he felt interested was this: that after having spoken for some years on pepsin, and having studied the question, they had at last arrived at a point of purity with reference to that article, and they were able to speak of it now as being absolutely pure. He therefore wished to ask Mr. Ball when he had obtained a pepsin absolutely pure by applying the Pharmacopœia test or the test he himself gives, how much fibrin or white of egg absolutely pure pepsin would dissolve. He was totally ignorant of that himself. He begged to dissent from the inference which Mr. Ball drew: that was that intelligent pharmacists now used pure pepsin. The inference was that they should discard altogether the Pharmacopœia. He did not think so, for as long as they had a test given for the article he hoped they would be loyal to the Pharmacopœia, and that when pepsin was ordered—that was, apart from any particular make—they would adhere to the use of pepsin of the Pharmacopœia standard. He did not quite gather, either, from that paper whether the pepsins tested by Mr. Ball were tested on the Pharmacopœia method or on that method of his in which he used 5 oz. of acidulated water. He wanted to know whether Mr. Ball had found in the market a pepsin 1 grain of which would dissolve as much as 1,500 grains of white of egg.

Mr. GERRARD thought a very useful purpose had been served by the paper. He had had some experience in the use of pepsin, and, to some extent, papain. He could confirm what Mr. Benger had said about papain. He (the speaker) found it would have an eroding action. That is, it simply broke up the substance, and did not seem to dissolve it, as pepsin dissolved albumen or fibrin. He had himself worked with a good quality of pepsin, which he prepared himself by roughly cleaning and scraping a pig's stomach and precipitating with alcohol, and he was able to state that 1 grain of it would, in a 0.2 per cent. hydrochloric acid solution, dissolve 1,000 grains of white of egg at 130°, which was far better than any temperature below. At 130° the process went on most rapidly. He had seen 1 grain added to 1,000 grains of white of egg, dissolve the albumen in fifteen minutes if started at the proper temperature. Then if they wanted to produce the peptone they must carry on digestion for three hours longer. Mr. Schacht had inquired for a test whether peptone was produced or not. He had found a very satisfactory test to be sulphate of copper followed by potash solution. This, with a solution containing no peptone, did not give a red colour, but as the peptone began to be formed this colour became apparent and more intense as the peptone became more abundant.

Mr. BARCLAY, Birmingham, asked Mr. Ball whether he had tested the pepsin after it had been put aside. Was there any change by the keeping of it.

Mr. WRENN said that from experiments he had made some years ago he could confirm what had been said that commercial pepsin was readily found, 1 grain of which would dissolve 1,000 grains of coagulated albumen. He quite agreed with Mr. Benger about the 130° temperature. Much valuable time was otherwise wasted by following the Pharmacopœia, and to obtain the purest pepsin with the least possible trouble, he did not think he would attempt the glycerine solution which Mr. Ball suggested. How could they dry it? He had noticed that pepsin of the pig was more active than that produced from the stomach of a sheep.

The PRESIDENT, referring to the statement that pepsin contained variable amounts of sugar and starch, said it was true in trade they had such pepsins, but he did not know they were official.

Mr. MARTINDALE remarked that pepsin porci was not in the British Pharmacopœia, as Mr. Ball had said.

Mr. BALL, in replying, said that with reference to the remarks made by Mr. Naylor respecting the test—whether he (Mr. Ball) used the test of the British Pharmacopœia, or whether he used a set test of his own, he could only say that he used to test the activity of a pepsin upon albumen at the temperature of the stomach, which was stated to be 100°. He carried on the digestive process for a longer time—three hours in every case, instead of thirty minutes as directed by the Pharmacopœia—as he hoped by so doing to get a parallel process, and a result similar to what would be obtained if pepsin were taken internally. With regard to the remark made by Mr. Martindale, that there was no preparation termed "Pepsin porci" in the British Pharmacopœia, he applied to four wholesale houses for "pure pepsin," and they sent him what was labelled "Pepsin porci B.P."—(laughter)—which he found in every case to contain starch, which he took to be an adulterant, because it was not found in the stomach of a pig or of any other animal. (Laughter.) Again, with regard to the test for peptone suggested by Mr. Gerrard; it was an excellent test, but it was no use for calculating the quantity of peptone. It simply indicated the presence of peptone, and he outlined what he thought was a more satisfactory process, namely, to complete digestion, filter the solution, and evaporate the filtrate. The residue would give a fair idea of the amount of peptone-formed. Referring to the admixture of diluents with pepsin, he said that if starch or milk sugar did not assist digestion, why were they added, except to increase the weight and the amount of profit attached to the sale of pepsin?

Mr. NAYLOR suggested that they were diluents.

Mr. BALL asked then, Why did not the British Pharmacopœia adopt the pure variety? It would economise space and glass in the packing for sending out to their customers. It was not absolutely necessary to mix a pepsin with either milk, sugar, or starch. With reference to the suggestion of Mr. Barclay he must say that, although he had tested pepsins after recent preparation, he had not tested any which had been kept for some time, but the different pepsins he had now reported on he had again tried after an interval, and the results only confirmed his previous tests—the difference was so slight that it was not worth noticing. With reference to the remark by Mr. Benger that fibrin was not a good indication of the digestive power, he found that when the digestive solutions had been left standing for three days a perfect precipitate of undigested fibrin was left, and, if desired, could be dried and weighed. He had been asked how much white of egg a pure pepsin would digest when submitted to the British Pharmacopœia test. He found that the Pharmacopœia test was imperfect in this respect, that they never found the gastric juice of the stomach of such an acidulous nature as that suggested in the British Pharmacopœia test—0.1 or 0.2 per cent. of hydrochloric acid was the highest in natural gastric juice, but in the British Pharmacopœia they had 5 minims of the hydrochloric acid in the oz. of distilled water, equal to 3 per cent. That was too high. Most physiologists suggested that 2 per cent. was the highest for testing the digestive action of pepsin, and the same amount of alkali in another medium for testing the activity of pancreatin.

The PRESIDENT asked if there was any difference between pure pepsins from sheep's stomachs and that from calves or pigs.

Mr. BALL said he could only say that those pepsins he had tested were stated to have been obtained from the stomach of the pig.

The PRESIDENT said they were much obliged to Mr. Ball for bringing the matter before them. The more they discussed it, he thought, the more they felt how little they knew of the subject. (Laughter.) Referring to what had been stated about the presence of sugar of milk and starch, he said whether these had been added because the pepsin originally was too strong, and had had to be diluted down to the Pharmacopœia strength, or whether they were to increase the bulk, was a point they would not discuss any further.

A paper was then read on

ARE GLASS BOTTLES SOLUBLE?

By R. Reynolds, F.I.C., F.C.S.

The author referred to a somewhat startling statement by Reuter in the *Pharmaceutical Journal*, August 31, 1889, as to the action of chloral hydrate upon a glass bottle, in which it had been stored for a long time. It was to the effect that the crystals of the chloral lying next to the glass were intensely blue, and the colour was proved to be due to nickel—doubtless from the small employed in the manufacture of the glass. This illustration recalled the well-known facts of glass being affected by strong alkaline solutions, and the glass of stables being affected by the action of free ammonia. Reference was also made to the disintegration of glass which had lain in mud, and to the decomposition of hydrocyanic acid which had been kept in white flint-glass bottles, this being, apparently, due to the influence of the glass. The question occurred whether other decompositions of organic substances are due to the influence of glass. The author lastly quoted a recent observation by Professor Riezel, of Giessen, in the course of an investigation in regard to the acidity of the gastric juice. He had found that Congo red paper assumes a deep blue colour on contact with acids, especially with inorganic acids. The acid salts produce no change of colour. The test will detect $\frac{1}{50000}$ part of free hydrochloric acid. One minim in 20 ounces (say 1 in 10,000) is distinctly appreciable. But Riezel found that after keeping such a fluid in a flint-glass bottle for a day, the previously-mentioned reaction does not occur. Mr. Reynolds raised the question whether this result was traceable to the action of the glass of the bottle.

Dr. THRESH said that some years ago he himself noticed a similar action to that referred to in the paper. He was investigating the action of rain in a certain district upon the vegetation. It was supposed that some lime-kilns were materially affecting the vegetation, and he collected the rainfall at many different points in bottles and on litmus and other papers. He found invariably that the rain collected on the papers was acid, but that which was collected in the bottles was either neutral or alkaline. He discovered on investigation that the reason of this was in the bottles he employed. He tried all kinds of bottles, but found that the results were the same. He found that some decomposition took place in a very short time, and the free acid disappeared. His impression was that a decomposition of the silicate of soda or silicate of lime took place, and the acid combined with the base of that silica, which was then thrown down. He collected some of the rain water in platinum dishes, and the water collected in bottles gave him 5 grains per gallon more solid residue than that collected in the platinum vessels, and this residue was chiefly silica. He had no doubt some silicate was decomposed. In further experiments he noticed that if the acid solution were titrated, and they ran in soda until they got just a faint tint with litmus, in a few minutes that colour would disappear. They could get the colour back again with a little more soda, but it would again disappear. He had observed students going on adding standard solution to get back the colour in this way, thinking that they would obtain more accurate results. He had further observed that a mixture containing tincture of cardamoms placed in bottles varied considerably in colour in a month or so, and it was possible that other changes of colour of which customers complained were due to that cause.

Mr. LINFORD stated that hydrochloric acid acted very considerably on bottles, but sulphuric acid did not. The action of hydrochloric acid, however, soon ceased, and the bottle was no longer acted upon. Could anyone explain the cause of that?

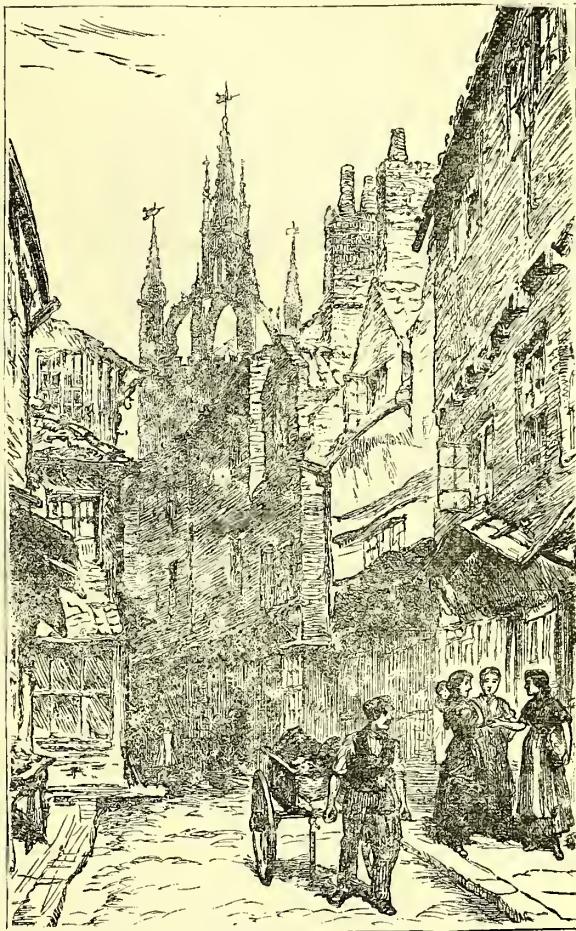
Mr. PROCTOR had found that new bottles had an alkaline reaction in a much stronger and more marked degree than old ones. The action disappeared to a great extent after the bottles had been used.

The PRESIDENT thought they should be very sure that the new bottles had not been washed with an alkaline solution. Probably those that showed the action which had been referred to had been washed with soda, and some faint trace of the alkali left behind.

Mr. PROCTOR was inclined to think that the reaction was due to something of an alkaline nature in the glass rather than something due to washing the bottles.

Mr. MARTINDALE remarked that there was one acid which much affected white glass bottles, that was osmic acid. The English-made bottles were chiefly affected. Nearly all foreign glass bottles stood the action of the acid wonderfully well. Where the grinding of the stopper occurred, the action was only slightly noticeable. He was told that this result was due to English bottle-glass containing more lead than the foreign glass. If they got bottles without lead they would find that they would stand the osmic acid very well.

Mr. MABEN said the action of acid on glass might easily be seen by the effect of the droppings from a syphon on the glass outside the vessel.



CASTLE GARTH.

Mr. WEDDELL (Mawson, Swan & Weddell) suggested that in taking up this investigation they should be sure whether the bottles were of French, German, or English make, and ascertain the composition of the glasses. English glass contained a good percentage of lead, which French and German glass did not.

The PRESIDENT: I presume the bottles you use are English-made bottles?

Mr. REYNOLDS: Yes.

The PRESIDENT, having thanked Mr. Reynolds for his paper, called upon Mr. Gerrard to read the next one.

EXTRACT OF STRAMONIUM.

By A. W. Gerrard, F.C.S.

A few months ago, finding my stock of extract of stramonium exhausted, and requiring some hurriedly, my attention was directed to the quickest way of preparing it so

as to meet the circumstances of the case. The official process being somewhat lengthy, it was thought percolation of the seeds with ether, for the removal of oil, might be omitted, and exhaustion at once effected by means of proof spirit. Accordingly the well-bruised seeds were extracted with hot proof spirit; the solution gave on evaporation a satisfactory extract containing but little fixed oil, easily removed by washing with a few drachms of ether.

Believing the above process might be made the basis of an improvement on that followed in the B.P. by saving time and ether, some experiments were instituted to determine the point.

In the first place the yield of fixed oil and extract by the official process was determined. For this purpose four samples of stramonium seed from various sources were exhausted with ether and proof spirit. The average yield of fixed oil was 23·1 per cent., of dry extract 4·47 per cent.

In the next experiment 1,000 grains each of the same samples of seed were well bruised, and exhausted by maceration and percolation with proof spirit. The resulting solutions on evaporation gave extracts having but a slight greasiness, which a small quantity of ether easily removed. The yield of dry extract was 4·4 per cent.

So far the results were decidedly in favour of omitting ether percolation, and although a little ether was used to wash the extract, it did not amount to one-fortieth the volume required to remove the oil from the seeds. To prove the two extracts were identical, so far as active principle was concerned, it was determined to compare their alkaloidal values, which was done as follows:—

Fifty grains of each extract were dissolved in a little water, a large excess of ammonia added, and the mixture well shaken with three successive quantities of chloroform. The chloroform on separation and evaporation gave from the official extract a residue of daturine weighing 2·2 grains, and from the extract by the new process 2·15 grains, practically no difference, except what may be ascribed to experimental error. Upon this evidence, that the active principle is present in the new extract in the same proportion as in the old, it may fairly be asserted that the new extract would not be found to differ in therapeutic action from the old.

Arguing from these experiments we may, I think, reasonably submit to the compilers of our Pharmacopoeia the desirability of amending the official process for making extract of stramonium, suggesting that percolation of the seeds with ether be omitted, that proof spirit alone be used for exhaustion, and the resulting extract, if containing oil, washed with ether.

The PRESIDENT said the paper was a very practical one. He might say that for years he had not used previous percolation with ether in extracting the drug, but considered it a waste of ether to do so, just as they looked upon the old treatment of ergot with ether as a waste. No doubt in the next issue of the Pharmacopoeia they would see the treatment with ether for the extraction of a fixed oil deleted.

Mr. CONROY said he thought they were much indebted to Mr. Gerrard for bringing this subject forward. For years they had been in the habit of extracting the drug without ether, and he could fully corroborate Mr. Gerrard's statement that the percentage of the product without ether was quite equal to that obtained with ether.

The PRESIDENT thanked Mr. Gerrard for his paper.

The next paper read was on

FERRI ET AMMONII CITRAS.

By B. S. Proctor, F.I.C.

In the early part of 1887 the author had repeated complaints that mixtures containing this salt speedily went wrong. Two of the mixtures specially noted were as follows:—

Forri ammon. cit...	..	..	..	..	3j.
Ammon. brom.	..	..	..	..	3ss.
Syr. aurantii	..	..	..	..	3vj.
Aq. ..	..	..	..	..	ad 3vj.
M.					(A. 970.)
Forri ammon. cit.	..	..	..	..	gr. xl.
Aq. ..	..	..	..	..	3vij.
M.					(A. 985.)

The latter mixture most quickly changed, and deposited a brown precipitate, the liquor at last becoming colourless, or nearly so. The precipitate was found to be carbonate and sulphide of iron.

Samples obtained from neighbours were practically identical, and when burnt left 32 per cent. and 30·7 per cent. of ferric oxide.

Mr. Charles Umney in 1873 expressed the opinion that it is upon the proportion of citrate of ammonia that the stability of the preparation depends, and while the author agreed to a certain extent with this statement, he thought that some other reason must be sought for. A solution of the citrate rendered alkaline remained unchanged, so also did one made acid with citric acid, although the latter became ferrous and lost its colour. Subsequently on incinerating a sample he found that the residue contained magnetic oxide and sulphide, which was a clear proof that the preparation had contained sulphate as an impurity. Obviously this had come in in the course of manufacture, and directing his remarks to this point, Mr. Proctor informed the Conference that a well-known maker of the salt had informed him that he expected that traces would be found in it, because he precipitated the ferric hydrate with soda instead of ammonia solution, and $\frac{1}{100}$ per cent. was the amount which he expected to be in it. In reality there was 2 per cent. of sulphate. The author thought that this could be accounted for by imperfect mixing of the alkaline and iron solutions, with consequent formation of basic sulphate. He suggested that the solutions should be mixed together in thin streams, because on the larger scale, when you pour solution of ferric sulphate into solution of ammonia, minutes instead of seconds will elapse before perfect mixture is effected, and while the stream of iron liquor is flowing into the alkali the centre of the stream will always contain iron in excess over alkali for a period which, though short, may be long enough to result in the formation of some basic ferric sulphate which may escape decomposition after the mixing is complete. The result is a brown precipitate suspended in a solution distinctly alkaline, and though to all appearances correct, it may contain basic sulphate along with ferric hydrate, and thus account for the faulty product being obtained, while there has been no deviation from the official process but that which every manufacturer is bound to adopt, namely, to work upon larger quantities. The time involved in chemical action is a point difficult to define, difficult to investigate, but not to be overlooked. The author further noted that the sulphate present in the citrate was not readily detected or estimated by direct addition of barium chloride to a solution of the scales in water. Details were submitted which showed that this was due to ammonium citrate, hence it is necessary in all cases of testing for sulphate in presence of citrates, and even of tartrates, to add hydrochloric acid in considerable excess. The amounts of sulphate reckoned as SO_4 found in the samples varied from 1 to 2 per cent. It is interesting in conclusion to note that the author found commercial samples of the preparation to have the following iron value: 32·0, 30·7, 30·0, 32·5, and 23·0 percentage of ferric oxide.

The PRESIDENT said he was glad to find that this substance contained a more uniform percentage of ferric oxide than it did twenty years ago. The presence of basic sulphate of iron in the salt was certainly objectionable. He remembered as a student many years ago that Professor Redwood in his lectures emphasised the importance of learning how to precipitate ferric hydrate with an alkaline solution; and Mr. Proctor had shown how even manufacturers operating on a large quantity might deceive themselves as to the alkali being in excess. He thought if manufacturers took greater care in the precipitation of their hydrate they would not have to complain of citrates with an objectionable quantity of 2 per cent. of solvent present in the ammonio citrate of trade.

Mr. MABEN said he should be disposed to expect that a solution containing 40 grains of ammonio-citrate of iron in 8 oz. of water would go wrong in any case. Stock solutions of the salt he found did not keep. Some fermentation took place, and he should say a weak solution of that kind would naturally go wrong.

Mr. PROCTOR said this did not occur with the samples he

had used; he had been trying to get a bad mixture to submit to the Conference, but could not get one to go wrong. (Laughter.)

Mr. MARTINDALE considered that germs of organic growths had probably been admitted to the citrate solution before it had been scaled, and that these might have set up fermentation. Unless these liquors were scaled off rapidly they were very subject to this influence. Old distilled water was also proved to be infected by these germs; indeed, it was one of the best culture mediums.

The PRESIDENT said there was always an objection to heating preparations which had to be scaled. The less they were boiled the less they were spoiled. Everyone knew that, and manufacturers liked to get scale preparations into the most concentrated form they could. When solutions were of that strength there was not much chance of vegetable growths forming, but he quite agreed that in dilute solutions they had these growths. There was a weak affinity between the citric acid and iron, and that might explain the change that went on in the cold. They all knew that ammonio citrate of iron could not be as soluble in twelve months as it was when new. There was a change went on in it that they did not understand, and possibly some slight change in the process of manufacture might affect it.

Mr. DOTT did not think that magnetic oxide of iron would be found in the residue if it were ignited sufficiently. He also said that it was well known that ammonium citrate prevented the precipitation of barium sulphate.

Mr. PROCTOR, in replying, said that he had tried the ordinary tap water as well as the distilled water, and the one went bad the same as the other. There was nothing in the ingredients of the mixtures to prevent decomposition, and the common practice of putting into mixtures tinctures and spirits tended very much to retard decomposition. Mr. Dott had suggested that it would make little matter whether the iron was in the ferrous or ferric state, because the combustion of the oxides would reduce it to the ferric state after ignition; but if reduction took place in the first part of the burning, a very considerable time at a good red heat was required to get the whole of the iron into the ferric state; it retained its magnetic property and a considerable trace of the lower oxide for a considerable time.

The Conference then adjourned for lunch.

On resuming a paper was read on

EASTON'S SYRUP.

By T. Maltby Clague, Pharmaceutical Chemist.

The author, after quoting Easton's original formula for this syrup, stated that for a ready consumption the formula leaves nothing to be desired, but on keeping a brown colour is developed, causing undesirable differences in its appearances at various times. Carteighe's formula contained double the quantity of ferrous phosphate. Martindale's syrup does not precipitate so much or darken in colour so rapidly as when it is prepared from the precipitated ferrous phosphate. During the past two winters the author met with samples of the syrup in a condition most unsightly in appearance. These had all been exposed to cold. One syrup was a jelly-like mass with long needle-shaped crystals and tufts of crystals, and a smaller amount of a fine precipitate. These solids dissolved on heating, but on cooling to about 32° F. precipitation again began. The addition of 25 per cent. of water sufficed to maintain solution when again exposed to cold, and quinine, strichnine, and ferrous phosphate added to make this up to Easton's strength did not disturb the permanency.

Samples were next prepared by (1) Easton's original formula, (2) Martindale's, and (3) one containing more sugar than either, and it was found that the precipitation and gelatinous appearance were in proportion to the quantity of sugar present.

			Offending
	Easton	Martindale	Sample
Quin. phosph.	.. 1.00	1.0	1.0
Fe ₃ (PO ₄) ₂	.. 1.00	1.0	1.0
Total P ₂ O ₅	.. 4.01	4.0	4.1
Sugar ..	.. 35.00	37.5	42.0
Water ..	.. 28.40	26.4	23.0

The above table gives in grains the quantities present in

each fluid drachm. Further experiments confirmed the conclusion that the sugar is the cause of the precipitation. The gelatinous syrup yielded 7.5 grains of dry material, which consisted of

Insoluble in water ..	..	..	..	6.66
Quinine phosphate ..	..	..	..	44.53
Ac. phosphoric (pur.) ..	..	..	..	13.33
Sugar ..	..	..	..	35.48
				100.00

The portion insoluble in water responded to tests for iron and phosphoric acid, and was probably the same as the precipitate reported upon by Mr. T. B. Groves.

The only reason for the precipitation of the quinine phosphate and gelatinisation of the syrup which the author could suggest was that it is similar to that in the case of solutions of quinine sulphate in hydrobromic acid when potassium tartrate is present in minute quantities, and to that observed



THE OLD MILL, JESMOND DENE.

in mixtures containing tinct. ferri perchlor., quin. sulph., and sp. chloroformi. He suggested, further, that for the preparation of Easton's syrup the original formula be adhered to. He regretted that in the B.P.C. "Unofficial Formulary" there should be a preparation bearing the same name which Easton gave to his syrup, and only containing three-fourths as much quinine phosphate. This is liable to cause some to make the mistake of supposing them to be identical, and may cause the "not over particular" to substitute the one for the other.

The PRESIDENT said that the paper was very practical. They were all accustomed to frequently handle Easton's syrup and phosphatic syrups generally, and some of them knew, to their sorrow, the solidification, if not the gelatinisation, that took place with syrups under certain conditions. His own experience was that this solidification of syrups had been noticeable during the last few years more than formerly, and it arose, as far as his experience went, from the almost entire absence of cane sugar from the market. He would not say that cane sugar could not be obtained, because it could

be obtained from certain manufacturers who laid themselves open to manufacture cane sugar as a speciality, but he dared say that 95 per cent. of the sugar of the trade was beet sugar. Syrup of iodide of iron and other syrups were subject to changes which he did not understand. One morning they would be quite fluid and right in their specific gravity; next morning a solid mass. In his belief, the change was due to a small quantity of inverted sugar or some substance that was present in beet sugar and not in cane sugar.

Mr. LINFORD, as one who had a great deal of experience in the manufacture of Easton's syrup, agreed that the excess of sugar had an important influence on the preparation. When he first made Easton's syrup in quantity it was constantly going thick. He then adopted the plan of using less sugar, and it left off crystallising but it rapidly changed colour. It was necessary to find some method of making it by which it would keep its colour. Adopting Mr. Martindale's process of manufacturing phosphate of iron, he made the solution of the phosphate of about four times the strength, so that one-fourth of the proper quantity of syrup would make the Easton's syrup. He kept the solution in small 6-oz. bottles, without corks, putting a few drachms of olive oil on the top of the solution when the bottle was filled. It would then keep for six months without change. The remaining ingredients of the syrup he dissolved in phosphoric acid, and added glycerine. The syrup was only made as it went out, and it was always right.

Mr. CONROY agreed that the reduction of the quantity of sugar had the desired effect. He had found the syrup solidify with sugar, which was no doubt cane sugar. The solidification might be overcome by reducing the quantity of sugar. A greater difficulty in Easton's syrup was its discolouration, especially when exported to a hot climate. He knew that the liquor which was used for making syrup when made with the full amount of quinine also became discoloured. His experience was that when the full amount of quinine was put in the syrup always became discoloured.

Mr. MARTINDALE said that on making the preparation years ago he found he could keep the different solutions separate. The solutions of phosphate of quinine and strychnine were put together and kept separate from the phosphate of iron. He tried to keep liquor and various modes of making it by the formula which he published in his book first, and modified as published in the B. P. C. Formulary, and he had been thoroughly satisfied with it. It was impossible to prevent its discolouration. It was not intended to be kept for any length of time. By the process published in the Formulary and in his book it could be made in ten minutes at any time. Why should it be kept? His experience of the Formulary formula was that it was as near perfect as a preparation could be made; if it turned brown they must throw it away and make it afresh. (Laughter and cheers.)

Mr. WRENN could hardly agree that if the preparation went a little brown they should throw it away. In washing the phosphate of iron he kept adding water and thoroughly washing, so that it did not acquire a blue colour. If they did that and did not get their precipitate too dry, by always using Martineau's sugar they would have no difficulty.

Mr. NAYLOR said there was one question that had not been studied in regard to this syrup, namely, the amount of phosphoric acid that had to be used. He had many times been puzzled by the appearance of this solid deposit in what he would term the concentrated liquors. So far as he had been able to ascertain from a limited number of experiments he had been rather led to the conclusion that the deposit might have occurred through an excess of phosphoric acid. He had separated this quinine body some time ago and submitted it to a gentleman who was thoroughly conversant with the examination of quinine preparations, and he pronounced it to be an acid phosphate of quinine. The gentleman informed him that there were different kinds of phosphate of quinine, and that it was very important that the amount of phosphoric acid should be kept within due limits. They might study the question with profit from that point of view as well as from the sugar side.

Mr. DOTT remarked that there was a very erroneous idea regarding the solubility of alkaloids in acids. It was not the case that in an excess they were permanently soluble, for in some instances the acid salts formed were but slightly soluble.

Mr. CLAGUE, in replying, said he was satisfied that glycerine did retard the colouring effect in syrup of this kind. Mr. Martindale's freedom from the difficulty might be explained by the fact that he did not live in that neighbourhood, and his preparation was not exposed to changes of temperature and cold. He asserted that so much sugar in syrups of this class made them more difficult to make, keep, and take.

The President thanked Mr. Clague for his paper.

Mr. PATTINSON read a paper on the

EFFECTS OF USING NITROUS VITRIOL IN THE MANUFACTURE OF CERTAIN AÉRATED WATERS.

By John Pattinson, F.I.C., F.C.S.

The author of this paper was consulted by a maker of ginger ale regarding the turbidity which occurred in the ale. Experiments led to the supposition that this was due to the vitriol—used for generating the carbonic acid gas—being contaminated with nitrous compounds; for it was found that when pure vitriol was used the ginger ale was perfectly bright. The amount of nitrous compounds required to cause the trouble was almost infinitesimal, for when a nitrite was added to pure vitriol, in the proportion of 1 in 10,000, this vitriol also gave rise to the turbidity. The author, therefore, advised aërated-water manufacturers to be careful of the vitriol they use.

The PRESIDENT pointed out that Mr. Pattinson's experiments quite agreed with those which had previously been made by one of his colleagues on the executive, Mr. Naylor, three or four years since. He noticed it was mentioned in the Year-book of Pharmacy, page 143, in 1885, and he thought the experiments made by Mr. Pattinson corroborated those Mr. Naylor then made. He was very much impressed the other day in visiting some chemical works hard by (Alhausen's) by the plant they were putting up for the production of sulphur from alkali waste, and he had no doubt whatever that they could procure from that an oil of vitriol that was very much purer than the ordinary sulphuric acid they had been accustomed to. The acid, he believed, produced by the new process which Messrs. Chance had worked out was purer than the ordinary brimstone acid.

Mr. NAYLOR said that he did not know that he could supplement anything the chairman had said, except to say that, while his experience travelled over the same ground as Mr. Pattinson's, it was rather with a different object. It was not so much to point out the opalescence as to account for a defect in the pungency. He did not observe that Mr. Pattinson had referred to that in his paper, and he, therefore, asked him whether he had found the effect of the nitrous acid in the oil of vitriol prove destructive of the pungency of the ginger?

Mr. T. HOWELL WILLIAMS (London) said as a manufacturer of aërated waters he had experience of this difficulty, and although the most marked effect was loss of flavour in ginger ale, yet at the same time he had been troubled by an almost similar effect in all kinds of aërated waters. He found that it was due to the nitrous or nitric acid fumes in the carbonic acid gas. Having satisfied themselves that that was the cause, they now only found it necessary to pass the gas through a scrubber containing an alkaline solution of permanganate of potash. The effect then was everything that could be desired. (Applause.)

Mr. PATTINSON said that Mr. Naylor's experiments were undertaken with the object of throwing light on the utter loss of aroma or pungency, but his attention was not directed to that point at all, rather to the cause of the turbidity. It was very likely that the pungency would also be effected by the same cause. With regard to the President's remarks about the oil of vitriol, however pure the sulphur might be, the vitriol might still contain nitrous compounds; the manufacturers could destroy it by heating the sulphuric acid with a little sulphate of ammonia, which would entirely destroy the nitrous compounds, and the presence or absence could be easily ascertained by a drop or two of permanganate of potash put into 20 cubic centimetres of oil of vitriol, and mixed with water, which would retain a pink colouring if free from nitrous compounds.

The following two papers were then read by Mr. J. C. Umney :—

IPECACUANHA, FLUID EXTRACT AND WINE
(STANDARDISED).

By J. Oldham Braithwaite and John C. Umney.

The authors propose to employ a fluid extract of ipecacuanha of standardised emetine strength as a basis for the various fluid preparations of the drug, particularly the wine. They find that when the root is treated first with rectified spirit and subsequently with the same menstruum, in conjunction with lime, that complete removal of the emetine is effected. A fluid extract so prepared is afterwards standardised so as to contain 1·25 part of emetine in each 100 fluid parts of the extract. This estimation is effected by a modification of Ransom's process, in which the impurities existing in the crude extract are removed by basic lead acetate, the resulting alkaloidal filtrate being titrated by Mayer's solution. Throughout the experiments the same sample of assayed root was employed, and results verified by estimating the alkaloid in the marc as well as in the various extracts.

From the standardised fluid extract they prepare the wine by diluting it to 20 volumes with sherry, allowing to stand, and filtering. It is claimed that the wine so produced is fully equal to that of the present Pharmacopœia in elegance, while it considerably exceeds it in alkaloidal strength.

IPECACUANHA WINE, BRITISH PHARMACOPŒIA.

By J. Oldham Braithwaite and John C. Umney.

Applying to the wine the method of assay described in the previous note, the authors find that when prepared by the official process, although the root is exhausted, a portion of the emetine is subsequently lost. This loss is traced to the heating necessary to produce the powdered extract. Examination of "trade samples" confirms the results obtained on the small scale with assayed root. The figures for emetine obtained from a volume of wine equivalent to 10 parts of root range from 0·1077 to 0·0378. Out of eleven samples examined, however, seven give between 0·0756 and 0·066. A sample of wine prepared by the process of the previous (1867) Pharmacopœia gave 0·1228 part of emetine, a similar volume of the official wine made from the same root gave 0·0812 part, the root itself 0·132 part. The conclusion arrived at is that, although the present process fairly exhausts the drug, the subsequent loss of a part of the emetine renders the preparation much less rich in its active ingredient than its predecessor, notwithstanding that it is admitted on all hands to be a more "elegant" preparation.

Specimens of standardised fluid extract and of the wine prepared from it were shown; also "Vinum ipecacuanha, B.P. 1885," made at the same time and from the same ingredients. It was seen that the standardised wine was quite as elegant as, if not more so than, the less active official preparation.

Dr. Thresh then read the following paper in the absence of the author :—

A VOLUMETRIC PROCESS FOR THE ASSAY OF IPECACUANHA WINE.

By T. P. Blunt, M.A.

It was suggested in this paper that the presence of alcohol in the wine interferes with the action of Mayer's reagent, and to obviate this it was suggested to evaporate 50 c.c. of the wine on a water-bath to 20 c.c.; then add 10 c.c. of Mayer's solution, allow to deposit, and filter through a 3-inch paper. Take the filtrate, which should measure not less than 25 c.c., and cautiously add to it centinormal mercuric chloride until the mixture is faintly and permanently cloudy. The quantity required is from 4 c.c. to 6 c.c. Commercial samples of wine required 4·2 c.c. and 6·8 c.c. It was suggested that the method is capable of wider application. The Mayer's solution is made by adding to 100 parts of 10-per-cent. potassium iodide solution a saturated solution of mercuric iodide [in potassium iodide] until a permanent precipitate is formed, filtering and making up to 200 c.c. with distilled water.

The PRESIDENT said the preparations of ipecacuanha

seemed to be as much now the *bête noire* of pharmacists as they were twenty-seven or twenty-eight years ago. He found that amongst the subjects suggested for the Conference at its foundation was one on the deposit in ipecacuanha wine, and they were still at it. He then called upon Mr. Ransom and others to speak on the three papers, remarking that as a practical man he thought the mischief of the acetic extract of ipecacuanha for the production of the wine was the destruction of the alkaloid during the heating to which it was subjected. His son said it had to be subjected to forty hours' heat before it could be got in a condition fit to be powdered. There could be no question whatever that if emetine was destroyed by heat, the B.P. process was objectionable. It was quite clear that the ipecacuanha wines of the trade were not by any means uniform; they found some of them yield two or three times as much alkaloid as others, and he thought they should have something like uniformity on the matter. With Mr. Naylor, Mr. Ransom, and Mr. Martindale present, he thought they should have something which should really put them at rest on the matter.

Mr. RANSOM congratulated the readers of the papers. He said that he knew the process he suggested did not work out sufficiently well to adapt it for the acetic extract. The variety of the roots imported and the difference of their alkaloidal value were quite sufficient to account for considerable differences in the wines and extracts. There were also a great many other things to be taken into consideration. The heat employed in the drying of the extract was quite sufficient to lessen its value. He believed a great amount of good would result from a standardised preparation of the drug. Ipecacuanha was a drug which, as much as any drug that was used, did, he thought, require standardisation.

Mr. MARTINDALE said the paper afforded a product that was superior to acetic extract. There were various objections to it, including the too great quantity of fluid which had to be evaporated, and which must be detrimental to the product. It was very difficult to evaporate it down to the condition of dryness in which it was powder, and the process of exhaustion by means of lime and rectified spirit certainly would have a better result. In the American Pharmacopœia, he knew, they had chopped and changed their fluid extract of ipecacuanha two or three times. They had had an acetic fluid extract which contained glycerine to some extent, with the idea of preserving the drug from the unsightly deposit that nearly all preparations of ipecacuanha afforded. But this was objectionable owing to the viscosity of the product, and was not superior to our own ipecacuanha. Getting the alkaloid nicely into condition he certainly thought was a step in the right direction. They got rid of the vegetable acid, which he had looked upon as being the main cause of the deposit in the old ipecacuanha wine. He congratulated Mr. Umney on the success of his papers.

Mr. RICHARD REYNOLDS thought the paper was very definite and thorough. It was a most unsatisfactory thing, as they had been reminded, that their progress during the past quarter of a century had been backwards so far as the manufacture of ipecacuanha wine was concerned. The paper showed the necessity for a proper revision of proposed processes before they were admitted into the Pharmacopœia. The B.P. process never would have been if the Conference had had it to discuss, and this showed how important it was to have pharmacists associated with others in the making of the Pharmacopœia. Until that was the case he supposed these mistakes would go on. He hoped that when one mistake was detected it would prevent a future crop. (Laughter.)

Mr. NAYLOR said the results of his former experiments pointed to acetic acid as being the best solvent. He was glad to find that Messrs. Braithwaite and Umney had got the matter before them in an official form, and he hoped they would no longer labour under the delusion that they had got the emetine in the wine when they had simply decomposed it. He hoped, too, that they should by-and-by succeed in gaining recognition for a standardised fluid extract. He thought that of the United States Pharmacopœia a most imperfect one, and a most roundabout way of getting a preparation.

Mr. CONROY said that by macerating the whole root in the wine, as he had explained at a previous meeting, they got a strong wine and one that kept well. He was pleased

to see the excellent results obtained by the authors of the paper. The fluid extract which had gone round the room was everything that could be desired, and the sample of wine also seemed most excellent. He thought that the process of the Pharmacopœia ought to be discarded, and they should revert to the old process of using the whole root, or use a standardised fluid extract.

Mr. BARCLAY congratulated not only the authors of the paper but the President on having a son who read such an interesting paper, and was following in his footsteps. One outcome of the paper was to show the importance not only of standardising the drug but standardising the preparations. He hoped that question would be brought more and more to the front. It was of the utmost importance that potent preparations should be standardised as well as the drugs themselves.

Mr. THOMAS MABEN was glad that ipecac. would not much longer be the *bête noire* of pharmacy. He had suspected that evaporation to dryness destroyed a certain amount of emetine, and probably some of them remembered that he had experimented in *corpo rili*, like Mr. Proctor, and found that the ipecac. was not so effective as it ought to be. After that he did not evaporate to dryness, and he had found the wine thus prepared very good. He took the additional precaution, however, of separating the tannin from the wine he employed, because he had the impression that it tended to precipitate the emetine. The wine of the 1867 Pharmacopœia did not keep so well as the present wine did.

The PRESIDENT said they were very much at sea as to the yield of the drug, and he hailed with satisfaction the introduction of a standardised fluid extract.

Mr. J. C. UMLEY, in replying, said that their only remark about the 1867 wine was that it was good so far as emetine strength was concerned. As to its elegance, he said nothing except that the present wine was much more elegant. With regard to Mr. Naylor's remarks, he might repeat that acetic acid perfectly exhausted the ipecac.

Dr. THRESH then read the following paper:—

NOTE ON HYPOPHOSPHOROUS ACID AS A SOLVENT OF STRYCHNINE AND MORPHINE.

By H. W. Jones, F.C.S.

In searching for readily soluble salts of strychnine and morphine for hypodermic medication I was struck with the extreme solubility of both alkaloids in dilute hypophosphorous acid; and the ease with which these alkaloids dissolve to form neutral, or practically neutral, solutions, when hypophosphorous acid is employed, points to a possibly advantageous use of such compounds for hypodermic injections.

In the case of hypophosphate of strychnine, it appears to be a very stable salt in solution, and hypophosphorous acid might, I think, be usefully employed, not only to form a hypodermic injection, but in place of the hydrochloric acid ordered for making liquor strychninae P.B., as the official preparation sometimes gives trouble in cold weather from the separation of crystalline matter.

The morphine combination also appears to keep better in solution than the acetate, and would more easily afford a stronger solution than the official "Injectio morphinae hypodermica," in cases where such was required.

A solution of 1 in 6 is sometimes wanted, and the ready solubility of hypophosphate of morphine allows of this being easily made, or even of a very much stronger solution. Thus, for a concentrated injection intended for veterinary use I found no difficulty in preparing a solution four times the strength of the official injection.

The solutions so produced with hypophosphorous acid, and using a slight excess of morphine or strychnine, are neutral, or only very faintly acid. In the case of morphine I have found it advantageous to make a decidedly strong solution, to estimate the morphine, and dilute to the required strength.

Morphine hypophosphate is so readily soluble that crystals only separate from a thick, syrupy mother-liquor after keeping for some time.

Strychnine hypophosphate can be more easily obtained, as, although exceedingly soluble, the highly-concentrated solution solidifies on cooling to a crystalline mass, from which the salt can be separated.

The salts of both alkaloids would well repay an extended examination, both as to composition and solubility.

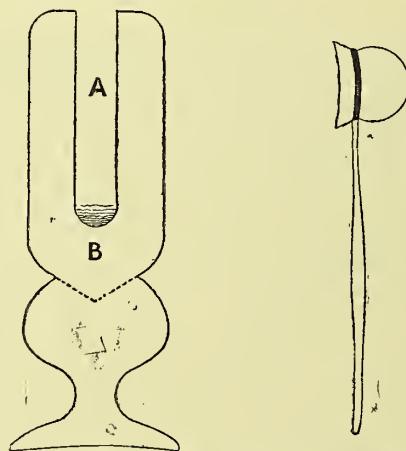
There being no discussion, a paper was read on

A NEW MODE OF APPLYING CHLORIDE OF METHYL.

By W. Martindale, F.C.S.

The author, after referring to the manufacture of this compound, as briefly described last week, stated that it is largely used in France for the manufacture of methyl compounds, such as methylaniline and the new antipyretic exalgine (methylacetanilide), and as a compressed liquid it is used as a powerful refrigerating agent. For medicinal use, a pulveriser is attached to the portable copper cylinder, in which it is sent out, so that as the chloride is emitted it vaporises and produces intense cold. In this form it is employed as a local anaesthetic or for relieving neuralgia, sciatica, and other affections.

A new form of applying it is that in which the chloride of methyl is contained in a liquid form in what is called a thermo-isolator. If a little of the liquid chloride be drawn into a beaker, it boils rapidly and is volatilised almost immediately, but in the thermo-isolator it may be retained for some time at the ordinary temperature, so that tampons may be dipped in it and applied to any part of the body requiring its use. The thermo-isolator is simply a glass test-tube A, fused at the top to a larger outer surrounding glass tube B, with a vacuum intervening, which acts as a non-conductor of heat, or, as it is termed, a thermo-isolator. The tampon is



a ball of soft material covered with lint, inserted in a wood holder, as shown in the figure.

Mr. Martindale stated that he recently witnessed in Paris a patient suffering from facial neuralgia apply a jet of the chloride freely along the lower jaw and side of the face, afterwards repeating the process along the gum inside the mouth. This he applied daily, and said it was the only thing that gave him relief.

Mr. Martindale showed one of the cylinders of the chloride, and there was considerable competition amongst the members of the Conference to have a trial of it.

The President having thanked the author of these papers, the Conference adjourned at 4.20 P.M. for

AFTERNOON TEA.

This is a new feature in these annual gatherings, and there was considerable expectation amongst the members as to what it would be like. A short time sufficed to convince them that it was an ordinary cup of tea served somewhat inefficiently, and the scramble for it was greater than was calculated to make the beverage agree with the proverbial description. Meanwhile carriages were waiting to take the members for

A DRIVE.

Making for the bridge which Lord Armstrong built and presented to Newcastle, the carriages passed through an interesting bit of the city, then through Lord Armstrong's park, which he also gifted. Continuing the drive down a pleasant lane, Heaton Park was reached and much admired.

The carriages then turned, and by the same route reached Jesmond Dene, where the members alighted, exploring the Dene on foot, and returning to the city by tram and otherwise. Except for some private festivities the rest of the day was a blank to nine-tenths of the members.

SECOND DAY.

The Conference did not commence proceedings this morning until about a quarter-past ten, in consequence of a little variation being introduced into the programme. This consisted of the engagement of a local photographer to take a portrait of a group of the officers at the door of the college, Mr. Umney being in the centre. Some minutes were occupied in arranging the group on chairs and forms, and just when the photographer had fixed his camera in position, and a solemn and learned look had pervaded the countenances of the sitters, Principal Garnett, who was superintending the arrangements, discovered a huge poster in red ink affixed to the side of the doorway, which he suggested should be removed. A momentary discussion as to its effect resulted in its removal, and the photographer having requested the sitters to look cheerful, the lens was uncovered and the negative printed. With a sigh of relief the group broke up and retired into the college to commence the proceedings of the day. The attendance was somewhat small. The President, having taken the chair, called upon Mr. Naylor to read a paper on

CHEMICAL OBSERVATIONS ON THE ROOT BARK OF EUONYMUS.

By W. A. H. Naylor and E. M. Chaplin.

The authors preface a description of their methods of procedure by the statement that Mr. W. T. Wenzell appears to be the only chemist who has published the results of a systematic examination of this drug. His monograph on this subject is to be found in the *American Journal of Pharmacy* for September, 1862. Following, in the early stages of their investigation, the plan marked out by Wenzell, they obtain results which confirm his only in part. Messrs. Naylor and Chaplin agree with Wenzell in finding in the extraction, with cold distilled water, citric, tartaric, and malic acids. They, however, fail to find the peculiar acid described and named by Wenzell—euonic acid. In place, too, of finding asparagin, they have met with a glucosidal principle, which is colourless, sweet, and melts at about 182° C. It dissolves in cold water, more freely in hot, and is sparingly soluble in alcohol and ether. It does not turn red by contact with strong sulphuric acid, and is not precipitated by tannic acid. In order that this interesting principle may not be lost sight of, they propose to name it provisionally *Atropurpurin*. The authors have separated the bitter uncrystallisable principle, termed by Wenzell euonymin. By alcoholic extraction they have also isolated Wenzell's uncrystallisable yellow resin. They have searched for an oleo-resin, but have failed to find one. In summarising the results of their examination of the root bark of euonymus, they report the finding of the following organic constituents:—

Citric, tartaric, and malic acids, atropurpurin, euonymin (Wenzell), neutral fixed oil, crystalline free fatty acid, or acids, acrid principle, yellow resin, brown resin, bitter extractive, and wax.

They point out that their analysis differs from Wenzell's, in that they find atropurpurin in place of asparagin, bitter extractive in place of soft resin, free fatty acid, or acids, in place of crystalline resin, brown resin (soluble instead of insoluble) in ether; and, in addition, an acrid principle.

The PRESIDENT felt very much indebted to their able secretary for bringing this matter forward. At the present time he knew of nothing so unsatisfactory in trade as preparations of this substance.

Mr. GROVES asked whether the euonymin of commerce was made from the root bark. What was Mr. Naylor's reason for examining the root bark in preference to the bark of the twigs and branches? Did the examination detect the real active principle? Had the crystalline body which looked like asparagin any action on the body if taken internally; had Mr. Naylor tried that?

Mr. MARTINDALE observed that the substance which looked like asparagin was not identical with asparagin.

Mr. NAYLOR, in reply to Mr. Groves, said he used the root bark partly because Mr. Wenzell himself had examined the root bark, and, secondly, because, so far as he knew, the twig bark did not really come into commerce. The root bark was principally used. The main difference between the root bark and the twig bark, in point of comparison, was this—that the root bark contained very much less of the poisonous bitter principle which had been isolated by Meyer and by Romm, and was a glucosidal body analogous to digitalin. He did not know that there was any difference between the barks except that. With reference to the glucoside which they had isolated, he had not experimented upon himself, or upon others, beyond tasting it from time to time. It had a slightly sweetish taste, but it gave no colour with sulphuric acid. He was unable to say what was the active principle of euonymus; but this paper was really a preliminary one of a more pharmaceutical character to follow, and they thought a paper of that kind might very properly precede that contribution. (Cheers.)

The PRESIDENT was glad to learn that Mr. Naylor proposed to take further action in this matter.

The next paper read was

MEDICAL AND CHEMICAL MISCONCEPTIONS ABOUT LITHIA.

By Louis Siebold, F.I.C.E., &c.

The author of this paper gave a brief résumé of it, stating at the outset that for many years lithium salts have been used for the purpose of preventing the deposition of uric acid in the tissues, or for removing such deposits when they are formed. In these respects they have been held to be superior to potassium salts, and are consequently largely employed in chronic gout, calculus, &c. It is supposed that a smaller amount of lithia is required to form soluble salts with uric acid than of soda or potash. Of course the low atomic weight of lithium bears out this idea—indeed, 74 parts of lithium carbonate possess the same neutralising power as 138 parts of potassium carbonate. But it happens that medical views of the value of lithium salts go far beyond the ratio which these figures indicate; if it were not so they would not have taken the high place in *materia medica* which they have done. The belief in lithium carbonate as an antacid extends to the citrate (which is changed to carbonate in the organism), and even to certain mineral waters which contain it in extremely minute quantity, as chloride or sulphate. This seems quite irrational, and the question arises whether this fame really rests on a solid foundation or on misconceptions. The author was inclined to the latter view, and experiments made some years ago had led him to arrive at the following conclusions:—

(1) The relative solvent action of solutions of lithium, sodium, and potassium carbonates on a given weight of uric acid under equal conditions of dilution and temperature is strictly proportional to the ratio of the molecular weights of these solvents.

(2) Equivalent proportions of the three solvents named dissolve equal quantities of uric acid under equal conditions of dilution and temperature.

(3) Crystals of uric acid deposited from urine show the same behaviour towards the solvents named as the pure uric acid used in 1 and 2.

(4) Equal weights of a urinary sediment consisting of acid urates are dissolved by quantities of the three solvents named proportional to their molecular weights.

(5) Lithium chloride and lithium sulphate exercise no solvent action on uric acid and acid urates.

(6) Natural mineral waters containing lithium chloride have no solvent action on uric acid beyond that exercised by basic constituents simultaneously present, and by the water.

(7) The degree of alkalinity of urine produced by the internal administration of medicinal doses of lithium citrate is not greater than that produced by equivalent doses of potassium citrate. It is greater than that produced by equal doses of the corresponding potassium salts, but only so in proportion to the molecular weights. (All these experiments were conducted under strictly equal conditions of diet. The alkalinity was determined in the urine of twenty-four hours.)

To the foregoing conclusions the author adds that lithium salts are known to be more toxic than potassium salts, and hence less suitable for prolonged administration.

Altogether the superiority of lithia salts as remedies in calculus, gout, &c., appears to be much over-rated.

The PRESIDENT said they were fortunate in having there that morning one or two medical gentlemen, who possibly could throw some light on that matter. Mr. Siebold had, from a medical point of view, certainly raised some interesting points.

Mr. PLOWMAN said he only rose because it seemed to him that no one else seemed inclined to discuss this paper. He agreed in a great measure with what Mr. Siebold had said. At the same time he thought that some allowance should be made for believing in traditions with regard to therapeutics in mineral waters. He thought that they must agree that it was impossible for the medical student and the busy medical practitioner to test rationally all the statements and all the traditional beliefs that had been delivered to them, very probably from the lecture-platform, concerning drugs; and the Pharmaceutical Conference was doing splendid work when it could induce such men as Mr. Siebold to come forward and show the fallacies regarding drugs. If other workers would come forward in the same way a great deal of this traditional therapy might be done away with, and they might then get some exactitude in the science; and might, in fact, begin to call it a science in some degree. There was one further caution—that, in spite of tested experiments, they must remember that the human body was not an enlarged intestine. Other things must be taken into account, and a proper balance struck.

Mr. PROCTOR asked Mr. Siebold if the fame of the waters was not established before the fact was discovered that lithia was in them. His impression was that the waters got the fame first, and the lithia was discovered afterwards.

Mr. SIEBOLD, after referring to Mr. Plowman's remarks, said that if lithia was administered to a great extent for such complaints as calculus, it was given with the idea that it acted as a powerful alkali did, to dissolve or render soluble uric acid, and he was anxious to show that it exercised this power simply in a chemical way as an alkali, and that whatever view they might take of the complicated processes going on within the organism, they could not arrive at the conclusion that certain salts could neutralise acids in any other way, or render insoluble salts soluble in any other way, than in the manner they had learned as chemists to understand; and they could certainly say that infinitesimal quantities of salts, whether lithia or potassium, could only neutralise infinitesimal quantities of acid or render them soluble. In reply to Mr. Proctor, he said that the waters of Baden Baden enjoyed a fame before the discovery of lithia in them; but they were used for a great many different complaints. He distinctly remembered that when his attention was drawn to the properties of lithia by Garnett, he read a German book calling attention to the value of the Baden Baden waters, inasmuch as they contained from 0.2 to 2 grains per bottle of chloride of lithium. Well, the very fact that it was announced that lithia had such an action was sufficient at once to recommend for special cases mineral waters containing small proportions of lithia, although it must be apparent to chemists that chloride of lithia had no more action than chloride of sodium on uric acid. Whatever allowance they made for effects of mineral waters hitherto not understood, they were, as chemists, justified in looking with extreme doubt on the utility of a small quantity of lithium salts in mineral waters. Some of these did not even contain the lithia they were said to contain. If they took the trouble to check the analysis given, they found the quantities much smaller, and, in some cases, there was none at all. He could not find it with the spectroscope even—(a laugh)—and although somebody claims to be able to detect lithia with the spectroscope to as small a quantity as a milligramme in the litre. It was enough for some persons to hear that there was lithia in the water, and it was at once tried—unfortunately, in the place of some remedy which might have a reliable and valuable action. (Applause.)

The next paper read was on

ARSENIC IN GLYCERINE.

By L. Siebold.

Within the past year several observers have publicly stated that they have met with glycerine of German manufacture which was contaminated with arsenic. The author of this paper has made an endeavour to ascertain to what extent this contamination is present in the commercial glycerine commonly sold for toilet and pharmaceutical purposes. The samples obtained were colourless and odourless, were both of English and continental manufacture, and proved to contain arsenious acid, varying in amount from 1 in 6,000 to 1 in 2,500. The samples which were found to be free from arsenic were the best product of one eminent firm, what firm the author did not state, but he said that this arsenic-free glycerine was "the very kind and quality which is universally used by pharmacists in this country in the dispensing of prescriptions." For the detection of the arsenic the author recommended, and gave a demonstration of, Gutzeit's test, which is briefly as follows (we incorporate here Mr. Siebold's modification of the test, which he described in detail):—Place a mixture of 5 c.c. of dilute hydrochloric acid (1 of s.g. 1.16 acid with 7 vols. of water), and 15 to 20 drops of the glycerine in a long test-tube (8 inches by 1 inch), with about 1 gramme of pure zinc. Before adding the zinc, place a drop of mercuric chloride solution in the centre of a small white filter-paper, allow to dry, and as soon as the zinc is put into the test-tube make the paper a cap for it. In the presence of $\frac{1}{100}$ of a milligramme of arsenic in the gramme of glycerine a distinct yellow stain is formed on the under surface of the paper cap in the course of a quarter of an hour, and in less time, according to the largeness of the amount of arsenic present. For all practical purposes a glycerine may be reckoned as pure which does not yield the stain within a quarter of an hour. The author did not approve of silver nitrate, suggested by Vulpius, instead of mercuric chloride; the latter is not affected by light nor by the paper as silver is—moreover, it is not so easily affected by sulphur compounds, the action of which Mr. Siebold guards against by adding to the mixture of glycerine and acid a drop of iodine solution, or as much as will give it a distinct colour. This "fixes" the sulphur, so that, if present, it is not eliminated as sulphuretted hydrogen.

Arsenic in glycerine is considered to emanate from the sulphuric acid used in the manufacture of the latter. It might possibly also emanate, partly at least, from the glass of the bottles in which the glycerine is kept. Years ago the author traced the presence of lead in liquor ammonie acetatis to the solvent action of this liquid on the lead of the glass. What suggested to him a similar action in the present case was the well-known and very powerful solvent action of glycerine on arsenious acid, and the observation during his recent experiments that samples of a certain well-known brand of glycerine which had been kept in bottles for a long time contained arsenic, while this impurity was absent from samples of the same brand drawn from tins. This difference may have been purely accidental, but it certainly renders it desirable to study the action, if any, of pure glycerine on bottles of various kinds of glass; and this he is at present engaged in investigating. Pure glycerine kept in Price's bottles for months, and the same article similarly kept in bottles from the Yorkshire Glass Company, proved to be free from arsenic. With reference to the bottled glycerine in which he found arsenic, while a sample of the same make from a tin contained none, he stated that the bottles in which this was contained were made of glass in which he had no difficulty in demonstrating the presence of arsenic.

The PRESIDENT said the paper was a very important one. Glycerine was so largely used for medicinal purposes, and so freely handled by the public, that if arsenic were present in it they ought to know it; but they wanted to be very careful, and he hoped the members of the press would bear that in mind. They did not want to create a scare on the subject. (Cheers.) Let them approach the subject with open minds; let them first of all recognise the fact that arsenic was to be found in glycerine; but where did it come from—from im-

perfection in its manufacture, or the glass in which it was stored, or from the tin that it was put into, or from the solder round the tin packages? He was glad to learn that some glycerine was to be met with which was pure. He should also like to ask Mr. Siebold, assuming that arsenic was present, what he suggested to prevent the contamination.

Mr. A. H. ALLEN congratulated Mr. Siebold on finding a test which seemed so simple and satisfactory. He was listening all through the paper with the feeling that the results might be vitiated by the presence of sulphur compounds. He was glad Mr. Siebold ended by pointing out how easy it was to avoid their influence. Personally when he had been troubled in that way he had tried a drop of permanganate, but iodine was apparently more elegant. Sulphur compounds might have three sources—acid, zinc, and glycerine itself. Glycerine was of a very mixed character. There were various qualities in the market, and it was very likely on that account that they had this distinction drawn by Mr. Siebold, who said he was able to trace the pure kinds of glycerine to one source or process. They had first of all the method of obtaining glycerine by decomposing fats with super-heated steam. The fatty acids were not so good for candle-making by that process, but the glycerine produced was first-rate, and had no chance of being contaminated by arsenic. Where the glycerine had been obtained by such means it was likely to be pure. On the other hand, they had a very large quantity of glycerine made under different circumstances and from different material. He referred to soap lees, which were concentrated and distilled for the sake of the glycerine, the largest works being situated in Lancashire. This glycerine was employed for the manufacture of dynamite. Messrs. Nobel used several tons of glycerine daily to convert into nitro-glycerine, and insisted on a certain quality of glycerine for their purpose, and resented any appreciable quantity of arsenic in it. For his part, he did not think that the tins in which the glycerine was placed, or the other sources which the President and Mr. Siebold had suggested, were probable causes of the contamination. As to the arsenic in glass, it was a fact that at Castleford, the glass-making town, they used a ton of arsenic a week, but at the same time he always had the impression that the greater part of that went into the air and poisoned the inhabitants. (Laughter.) It was new to him to learn that ordinary glass contained so much arsenic as 0·4 per cent. Mr. Siebold said that all the glycerine he traced to one particular source was free from arsenic, although placed in bottles. That showed that the glass was not the source of the arsenic. It was mentioned recently in connection with a popular heroine that there was a specimen of glycerine found containing arsenic, and although that might have been put in purposely, it was curious that arsenic should occur so constantly in glycerine. That induced a train of thought that would occur to everyone.

Dr. THRESH said there was no doubt that to medical men it was of great importance to have pointed out to them all the possible sources from which their patients might receive into the system traces of poison like arsenic and lead. He had seen numbers of cases of lead poisoning, in which the medical men had been utterly baffled to trace the source of the lead. He remembered two cases—a father and son—in which the doctors were perfectly certain that they were suffering from arsenic poisoning, in which the source of the poison could not be traced, and it was possible that the persons had been taking some cough mixture containing glycerine and arsenic. These matters, from a toxicological point of view, could not be over-estimated.

The PRESIDENT said they should avoid bringing into the discussion the presence of arsenic in raw glycerine. They were concerned only with the presence of minute quantities of the poison in the glycerine used for medicinal purposes.

Mr. A. H. MASON remarked that if he understood correctly arsenic was only used in the manufacture of white flint glass, and ordinary bottle-glass was made without arsenic. He wished to know if he was correct in that. German glycerine generally came in the white-glass bottles.

Mr. CONROY thought most of them were very much relieved by the last remarks of Mr. Siebold, that he found the class of glycerine that was used medicinally to be free from

arsenic. He also understood that Mr. Siebold was able to trace the source of the contaminated glycerine. He should like Mr. Siebold to further elucidate that matter.

Mr. PLOWMAN said that they were bound to admit that the arsenical impurity in the glycerine was serious. Having in mind a paper read at the Conference some years ago by Mr. Fletcher, he wished to ask Mr. Siebold in his quantitative experiments what length of time he kept the suspected solution in contact with the zinc and hydrochloric acid? whether he considered that nearly all the arsenic anhydride came off? and whether or not he could give any allowance that should be made for the arsenical residuum in the generating-bottle.

Mr. BENERG asked whether the contamination might not arise from the soldering liquid used in the manufacture of the tin, which was composed of zinc dissolved in crude hydrochloric acid.

Mr. PROCTOR thought it was quite clear that the quantity of arsenic spoken of by Mr. Siebold could only get into the glycerine in the manufacturing process. He thought all the theories which had been advanced had nothing to do with it, and they should satisfy themselves that the arsenic present in such quantities did not exist in the glycerines used by pharmacists. The paper was to be regarded as a caution to them to use only those qualities of glycerine which had been prepared for medicinal use.

Mr. DOTT pointed out that mistakes had frequently arisen in the use of a test of this kind. Selenium, and perhaps other elements, might lead them astray. All processes which indicated extremely minute quantities were to be received with a certain amount of hesitation.

Mr. SIEBOLD, in reply, said he was somewhat inexact in one expression he used, in saying that he had traced the samples he had tested which were free from arsenic to the same-maker. That was not exactly the fact; what he meant to say was that he found out that they were of the same make. It was the special make that he referred to that he found to be pure, and which he believed was generally used for dispensing. As to the question of removing arsenic from glycerine, he certainly agreed that if the glycerine were carefully distilled and redistilled it could not contain arsenic. They could buy properly distilled glycerine in any quantity free from arsenic, so they were safe on that point. As to the source of the arsenic, it seemed some speakers thought he advanced the notion that it was likely to come from the glass. On the contrary, he showed at the outset that he agreed with the opinions of others that it must be traced to the sulphuric acid used in the process of making it. He had mentioned as a possibility that the greater part of the arsenic, or the whole of it, might come from the glass. They were justified in dealing with possibilities, and for that reason he had commenced a series of inquiries, which he would bring to a conclusion; but he was by no means prepared to say that it came from the glass. In fact, his experience during the last week showed that it was all the other way. It was, however, a fact, proved over and over again, that there was arsenic in glass. In performing Marsh's test they very often found that they got, after prolonged heating of the combustion-tube, a slight and doubtful deposit in the tube arising from the arsenic that came out of the glass. All the Bohemian glass tubes that he had purchased and a great deal of American glass contained arsenic, and had been found by a number of investigators to contain it. He had lately found arsenic in some French and German glass bottles. He had also found some glass bottles free from arsenic, and the glycerine in them was pure. In reply to Mr. Plowman's question, he stated that he conducted the experiment for four hours. He was not in a position to say that there was no occasion for going beyond the time specified. In conclusion, he suggested that the estimation of small quantities of arsenic for pharmaceutical purposes might be based on that test, using definite quantities of hydrochloric acid and zinc, with liquor arsenici hydrochloricus as a controlling test. His experience was that there was no arsenic in glycerine tins, and no actual case of arsenic being dissolved from the tin or solder had come under his observation. With regard to Mr. Dott's remarks, he might say that he had certainly not relied on one test merely, but had applied Marsh's test, and had convinced himself that it was arsenic.

The PRESIDENT thanked Mr. Siebold for the paper.

Mr. REYNOLDS read a paper on

NEGATIVE EVIDENCE OF LEAD IN DRINKING WATER.

By Richard Reynolds, F.I.C.

After referring to the discussions which have taken place during recent years on the action of certain waters in the West Riding of Yorkshire on lead, more particularly commenting upon the paper communicated by Professor Percy Frankland to the Society of Chemical Industry last winter, reported at the time in THE CHEMIST AND DRUGGIST, and to the paper read at the Leeds meeting of the British Medical Association by Dr. Sinclair White, the author of this paper proceeded to note the special features of these waters which dissolve lead so freely, mentioning in this connection the discovery by Mr. A. H. Allen that Sheffield water contains an appreciable amount of a free acid, which is not of mineral origin, but is probably derived from peat, through which the water from moorland districts filtrates in the natural order of things. It is this acid which seems to be the lead-dissolving factor in the waters; and the desire to supply towns with soft water may be taken as the reason why water from moorland districts is sought after. Mr. Reynolds had amongst others one water of this kind submitted to him. Its acidity was equal to 0·7 grain of sulphuric acid per gallon, and it readily dissolved lead. He proceeded to discuss the remedies which have been proposed, amongst them limestone, an admixture of hard water, and filtering through a charcoal filter—even a flower-pot filled with charcoal being efficient. Next referring to the conditions which determine the amount of lead in water, he spoke of the effect of prolonged contact, illustrating this with the results of analysis of tap-water, which, drawn off in the early morning, contained 0·35 grain of lead per gallon, later on 0·1 grain, and in the evening 0·03 grain. This water, when filtered through a charcoal filter, contained no lead. A common source of lead poison was, he thought, the custom which some servants have of filling kettles from hot-water cisterns. From this point he proceeded to draw the moral of his paper, observing at the outset that the analyst's duty is simply to speak of the sample before him; but it would be a great assistance if he were informed of the precise conditions under which the sample was taken, such as the time it had been drawn from the pipe. He thought that the water ought to be in contact with the service-pipe for at least twenty-four hours, and suggested that analysts' customers should be supplied with a printed statement setting forth the conditions which should be observed in drawing samples.

The PRESIDENT said that was a matter in which they, as pharmacists, were very much interested, coming as they did between the public and the medical profession; and he saw several gentlemen present that morning—one gentleman especially, whom Mr. Reynolds had mentioned in his paper, Mr. Allen, public analyst for Sheffield—who, he was sure, could give them valuable information on the point.

Mr. A. H. ALLEN said he had listened with much pleasure to what Mr. Reynolds had put before them, and he agreed with every word he had said. The subject was, no doubt, exceedingly important, especially as very frequently the effects of lead-poisoning were very serious, but the origin of them was so obscure that the medical men very often did not suspect lead-poisoning at all. As Mr. Reynolds had pointed out, a report could only be given referring to a particular sample; and it was a great pity that the public could not be educated into a more intelligent way of selecting things to send to the chemists for analysis, because a great deal of their money was wasted, the chemist's time was wasted, and at the same time suspicion and doubt were thrown on the accuracy of the analysis, simply because they had not taken the trouble to ensure that the proper conditions were present. He would like to mention one thing, not referred to by Mr. Reynolds in his paper, which happened in his own family. He was residing in Sheffield, and all the water that was laid on to the public supply, or, rather, which came into the inside of his house, passed through a lead pipe, and was liable to contain as much as three-tenths and even 1 grain of lead per gallon. That became a very serious matter personally he had no further interest in it, as he

entirely by filtering it. A wood-charcoal filter was inefficient; it must be animal charcoal. It was the phosphates of animal charcoal which really did the filtering. That was an important point, because they could easily tell the efficiency of the charcoal by the fact that as soon as the charcoal was saturated with phosphate of lead it became of a white or grey colour. They could see the change in the charcoal at the time, and so long as there was a distinct portion of it remaining black they might be sure it would be sufficient to remove the lead. Wood charcoal did not turn white, and it was quite clear if they were going to rely on a filter which was not doing its duty it would be worse than not filtering at all. He, in his family, filtered all the water used for drinking, for cooking vegetables, and such like; and he had a high-pressure filter arranged above the sink, through which the water ran in a stream as thick as a pencil, absolutely free from lead.

The PRESIDENT: Is that an animal-charcoal filter?

Mr. ALLEN: Yes; an animal-charcoal filter. In spite of this, he was alarmed when the members of his family again showed symptoms of lead-poisoning, and he could not fathom the mystery; but at last the cause was traced to the kettle, which had been "furred" with the lime deposit, and it contained an enormous quantity of lead. There was no cure for it but to buy a new kettle, which had been done. (Laughter.) This showed them how difficult it was to trace the source of lead-poisoning, and how the medical men were thrown off the scent, as there was no lead in the water used, and it all came from the kettle. (Laughter.)

Mr. BRANSON (Leeds) said that in the West Riding of Yorkshire some of the water contained lead equal to seven-tenths of a grain per gallon—that was when it was drawn first thing in the morning, and, therefore, probably contained the maximum amount of lead. The water was distinctly acid, the acidity equalling 0·14 grain of sulphuric acid per gallon, while the combined sulphuric acid amounted to 1½ grain, the permanent hardness was 4 degrees, and the total solids 6·7 grains. This water caused a very serious epidemic of lead-poisoning. Another water showed acidity equal to 0·9 grain of sulphuric acid, but as the combined acid was only 0·1 grain, the free acid could not be that. He rather thought it was hydrochloric acid, for he found the water to contain 0·7 grain of combined chlorine. Perhaps Mr. Allen would give his opinion on that point.

Mr. LINFORD said at Canterbury they were pumping water from a very deep well, but they found it very hard. The town authorities then arranged to precipitate the lime out of this water and supply the town with soft water, but there was considerable doubt as to whether this soft water was safe to send through lead pipes. It came to his hands to test the matter, and, after keeping the water for forty-eight hours in a leaden vessel, and giving it every possible opportunity of dissolving, he found that it did dissolve lead, and he also found that 1½ grain of carbonate of lime per gallon was quite sufficient to prevent lead contamination. At the same time he thought it was a mistake on the part of many public bodies to be searching for the possibility of supplying very soft water. He was informed that they were beginning to find in Glasgow that the health, especially of the children, was nothing like so good as when they had water with more lime in it than the Loch Katrine supply. Though he believed that children in taking milk took in a sufficient amount of lime for their constitutions, yet in Glasgow it was said there was an insufficiency of lime in the water for the health of growing children. Moderately hard water was as wholesome to drink, he believed, as a soft water. There was no difficulty in softening the supply of water. He did it himself constantly. He regularly put a certain amount of carbonate of soda and quicklime in it. In many processes of manufacture, especially in brewing, a certain amount of lime sulphate was necessary for the preservation of the aroma of the hop. He had known breweries where they had had such soft water that they had been unable to brew bitter beer, and he had proposed to small breweries that they should keep the water for a time in a tank containing pieces of gypsum, and this had been found to answer the purpose.

Dr. THRESH reminded the meeting that they were considering Mr. Reynolds's paper with reference to the presence of lead in drinking water. Mr. Reynolds placed at the end of the paper a suggestion which was a very valuable one. He thought it was desirable, in all cases in

which an analysis was sought in reference to the water supply, that the greatest importance should be laid on the point as to whether the water was likely to have any action on lead or not. He did not consider that any report on a water which was intended to be used for domestic purposes was really complete unless the analysis added something with reference to the action of that water on lead. He thought they could determine with considerable ease whether the special sample sent would be likely to act upon lead or not, and then the matter would be off the conscience. He had no doubt in many cases it would be of the utmost value to authorities to have that pointed out to them. The statement of Mr. Linford about the health of the children of Glasgow being affected by the soft water was certainly a most alarming one. He understood that the death-rate of Glasgow had gone down since the supply of the soft water, and now when they heard that the children were beginning to suffer it was certainly an alarming statement.

Mr. LINFORD: I have it from two Glasgow medical men.

Dr. THRESH: I should be inclined to doubt its correctness.

Mr. DOTT (Edinburgh) said it was quite true that the medical officer of Glasgow thinks that the soft water from Loch Katrine has a bad effect on the health of the children of the city. He had no doubt it was an illusion. There were other districts where the water was much softer without such effects. The state of things in Glasgow was, no doubt, due to insufficient nourishment. (Laughter.)

Mr. KINNINMONT (Glasgow) said there certainly was in the lower districts of Glasgow a good deal of distortion, but he thought it was due to the food. They did not take enough milk or porridge.

A MEMBER: There is too much of the water in the porridge. (Laughter.)

Mr. KINNINMONT: No. They take tea and bread instead, and there is also much sugar consumed. However, in the districts inhabited by the upper classes, where they did use porridge considerably, the children seemed remarkably healthy. They could see numbers—for they were certainly born in large numbers—of children in the lower parts of the town with distorted limbs, while among the better classes and districts this was not the case. He would add that a great deal of lime-water was used, owing to the belief that it greatly diminished the amount of distortion which existed. In the districts of Pollokshields a large quantity of lime-water was employed, and in the lower districts the people made it themselves. But in spite of this, he could say that the health of Glasgow was much improved since they got Loch Katrine water. He could remember when they had an immense amount of autumn diarrhoea, and this had in later years greatly decreased.

Mr. CHAPLIN said that at Wakefield, where he came from, there had been a new supply of water from the moor districts. He thought the public were rather inclined to be frightened of the supply of water from the moor districts, with the idea that water so supplied had an action on lead. Their friend who had just been speaking said the water obtained from Loch Katrine had as great an action on lead as distilled water, but the water supplied at Huddersfield had been brought forward owing to its action on lead. He had had several opportunities of looking into the question with regard to the moorland water-supply at Wakefield, and, although he did not profess to have gone to a very methodical analysis, yet, having roughly looked at the matter, he found, much to his surprise, that there seemed to be no action of the water on the lead, or, if at all, only to a very slight extent. On comparing it with distilled water the difference was very marked indeed. He asked a gentleman to analyse the water, and the analysis showed that there was a certain amount of salts in it, and on looking in Taylor's work on "Poisons" he found that salts would act as a protective. He thought they ought to disabuse the public as much as possible with regard to the effects of water obtained from moorland upon lead. His experience of the water which they had been using in Wakefield seemed to show that it was a perfectly safe water, though it was obtained from the moors in the neighbourhood. (Applause.)

Mr. REYNOLDS, in reply, said it was gratifying to him that such authorities as Mr. Allen and Dr. Thresh recognise that something ought to be done to make analysis more defined with regard to waters that are submitted. He felt sure that

no one doubted that that was a very marked fault. Medical men could hardly appreciate yet the extensive mischief which might be attributed to lead-poisoning. It was much more insidious and hidden away, and at present it was not fully recognised that there were those who were very sensitive in regard to the matter. He thought the only direct contentious matter, if he might use such a term, had come from his friend Dr. Thresh, whose suggestion seemed to indicate that the conditions should be made the most severe for the action of the water on the lead. He (the speaker) would prefer that the conditions should be identical with those in the client's house. (Applause.)

The next paper read was on

VERMIN-KILLERS CONTAINING STRYCHNINE,

By A. H. Allen, F.C.S., &c.

The author of this paper, in his capacity as a public analyst, had recently investigated a case of death by poisoning at Swanwick, and by his work succeeded in demonstrating that about 2 grains of strychnine had been given to the deceased person. Associated therewith was a colouring-matter, which he found to be ultramarine. Consequent on this he had to extend his inquiry, so as to ascertain where the vermin-killer, which had been used by the father of the girl to poison her, had been purchased, and the results he now submitted to the Conference. Some of the vermin-killers—indeed, a large proportion of them—were made by the chemists from whom they were purchased; others were the preparations of well-known makers. The following are the results of the analyses:—

Mark	Price	Weight of powder, grains	strychnine		Nature of starch	Colouring-matter
			Weight	Percentage		
<i>Local preparations</i>						
A	2d.	—	—	—	Rice	Prussian blue
B	—	—	—	—	"	Ultramarine
C	3d.	14·7	1·05	7·2	"	"
D	1d.	—	—	—	"	"
E	3d.	11·5	0·60	5·40	Rice & wheat	Carmine Ultramarine and Prussian blue
F	6d.	61·4	2·5	4·20	Rice	None
G	—	14·5	—	—	"	
<i>Wholesale preparations</i>						
1	3d.	5·6	0·61	10·9	Wheat	(?) Ultramarine
2	3d.	11·8	0·30	6·7	"	
3	3d.	13·1	1·12	8·7	Rice	"
4	3d.	11·6	1·28	11·1	"	"
5	3d.	13·1	1·70	13·0	"	
6	6d.	21·5	2·42	11·2	Wheat	Prussian blue
7	3d.	49·2	2·85	5·8	Soot	
8	3d.	30·5	3·45	11·3	"	Prussian blue
9	3d.	16·3	3·81	19·4	Rice	Carmine
10	3d.	10·0	4·18	41·8	"	Ultramarine

The wholesale preparations included the vermin-killers of the principal makers. The results show that ultramarine is the favourite colouring-matter. It will be observed that sample G was wholly uncoloured, though on the wrapper it duly announced that the contents were poisonous and contained strychnine. No. 1 was only very slightly tinted, being of a pale flesh tint, and No. 9 was only of a pale pink colour. [Mr. Allen had all these in small tubes, and exhibited them to the Conference.]

Sample F is of interest, as there is good reason to believe that it was the particular article used by the murderer Horton, although no sale to him was recorded in the poison-book. The vendor stated that he had ceased to use ultramarine for some years, and that all the vermin-killer he had recently sold was coloured with Prussian blue. On examination the whole powder was found to be coloured uniformly with ultramarine, but it also contained particles of sensible size, which were identified as Prussian blue. Sample F is also remarkable for its great weight, and for the large amount of strychnine contained in it.

It is interesting as an example of a preparation containing two kinds of starch, and coloured with carmine.

Of the preparations containing strychnine quoted in

wholesale price-lists, Battle's vermin-killer is probably the best-known and most extensively used. The colouring-matter appears to have been uniformly Prussian blue, but a table comprised in the paper showed that the composition ascribed to Battle's powder had varied in other respects at different periods.

According to this table it appeared that A. S. Taylor in 1862 found a 3d. packet contain 0.75 grain (5.8 per cent.) of strychnine mixed with flour, the whole contents weighing 13 grains. Bernays (1876) found the total weight 15 grains the diluent wheat-flour, and strychnine 1.6 grain (10.7 per cent.). Stevenson (1882) in a 6d. packet traced 2.5 grains (10 per cent.) of strychnine in a powder weighing 25 grains. Allen (1889) found in a 6d. packet 21.5 grains in all, the strychnine being 2.4 grains, or 11.2 per cent., and the bulk wheat-flour. Tardieu states that the proportion of the strychnine is 7.7 per cent., and the bulk potato-starch; and Woodman and Tidy give 23 per cent. as the proportion of the strychnine. All the authorities name Prussian blue as the colouring-matter.

Woodman and Tidy state that sugar is a constituent of Battle's vermin-killer. It is certainly not so at the present time. The proportion of strychnine (23 per cent.) given by Woodman and Tidy is largely in excess of that found by other chemists, and is probably incorrect. A "vermin and insect killer" was noticed as a preparation having a distinct individuality. The colouring matter is some kind of carbon, apparently soot, but the quantity used is only sufficient to make the powder grey. It is apparently variable in composition, for in 1876 Dr. Bernays found one packet to consist of a mixture of flour, soot, and strychnine, whilst in another packet the strychnine was replaced by barium carbonate. At the present time the powder contains both strychnine and barium carbonate, an analysis made in Mr. Allen's laboratory showing :—

	Per cent.
Strychnine	5.8
Barium carbonate (native)	45.0
Flour and soot (by difference)	49.2
	<hr/> 100.0

The association of strychnine and barium carbonate in the same preparation is remarkable, and it would be of interest to learn the real or supposed advantage of the combination.

The author then proceeded to demonstrate to the meeting how the colouring-matters may be detected. Ultramarine is at once acted upon by hydrochloric acid, loses its colour, and gives off sulphuretted hydrogen. The acid does not affect Prussian blue, but this is dissolved by solution of potash, which does not affect ultramarine. Moreover, if a little of the vermin-killer containing a blue colour be placed on a silver coin and moistened with hydrochloric acid, a distinct black stain is made on the coin. Again, ultramarine remains blue on ignition, Prussian blue becomes brown.

The great variation in the amount of strychnine in the different preparations deserves attention. Mr. Allen described two methods for the determination of the strychnine. One is to exhaust the dry powder with chloroform, evaporate the solution to dryness, and weigh the residual strychnine. This process gives satisfactory results with free strychnine, but if the powder contain a salt of strychnine the extraction is incomplete. Error from such cause, however, may be avoided by testing the residual powder for strychnine by the taste and the oxidation test. An alternative, and in many respects preferable, method is to treat the vermin-killer with water acidulated with acetic acid, until the residual powder has no bitter taste, and gives no coloration by the oxidation test. The solution is then treated with excess of ammonia, and shaken with a mixture of chloroform and ether. The ether chloroform layer is separated from the aqueous liquid, evaporated to dryness, and the residual strychnine weighed. Benzine may be substituted for the chloroform.

It does not seem to follow that the vermin-killer which contains the greatest weight or the largest proportion of strychnine is necessarily the best. Clearly pure strychnine would be inefficient, and hence the object should be to compound a mixture which will have the most powerful poisonous effect compatible with its attractive and appetising character. To effect this, the bitter taste of the strychnine should be masked as far as possible, and a suitable odourant should be added. This object seems to have been recognised in at least one instance, for the powder contained sugar, and had a

powerful smell of asafœtida and oil of anise. In most instances the vermin-killers were odourless.

But besides rendering a vermin-killer attractive to the animals it is designed to kill, it is highly important that it should be so coloured as to preclude the chance of its being taken accidentally by a human being, and to facilitate its detection in cases where it has been used for the purpose of suicide or murder. It is not too much to say that, had the blue colouring-matter been absent from the vermin-killer which Horton gave his child, the murderer would have escaped conviction.

After commenting upon the colours of the various samples, and speaking of the advantages which ultramarine possesses over Prussian blue, Mr. Allen proceeded to say that, on the whole, perhaps the most suitable pigment for colouring vermin-killers would be chrome-green (oxide of chromium). In it we have a bright green pigment of high colouring power, quite insoluble in water and dilute acid and alkaline liquids. It is wholly permanent under all imaginable conditions, and is not affected by ignition. Hence it could be detected after cremation of the body. Chromium is not a natural constituent of the body, is not used internally as a medicine, and can be detected and determined with ease, and certainly even when present in very minute quantities.

The discussion of the best pigment for colouring vermin-killers has not merely an academic interest, for the present facilities of obtaining and mis-using poison have recently attracted much attention; and it is not improbable that next session further legislation may be attempted with reference to the sale of poisons. Every pharmacist is aware that special restrictions exist with regard to arsenic, which cannot legally be sold in quantities of less than 10 lbs. unless coloured with soot or indigo. This provision is good in theory, but badly devised. It prevents the sale of an ounce of unmixed white arsenic to a professional chemist like myself, for strictly proper purposes, but it does not prevent a would-be murderer from obtaining a large quantity of the poison, provided he can give some plausible excuse for requiring it. It is interesting to note that all the solid arsenic found in the house of the late Mr. Maybrick was mixed with charcoal (not with soot or indigo), while two bottles were also found containing some of the coloured arsenic mixed with water. The discovery of a stained handkerchief in association with this coloured arsenic suggests that an attempt was made to filter the solution from the charcoal, which proving unsuccessful, the experimenter had recourse to an infusion of arsenical fly-papers. As already pointed out, charcoal and soot are by no means suitable pigments for colouring poison, and indigo is not the best for the purpose. But it would be useless to enact that all preparations of arsenic, strychnine, and other deadly poisons sold as vermin-killers should be coloured with a certain proportion of mineral pigment, if the sale of fly-papers containing a dangerous or fatal dose of arsenic or other poison is to be permitted with impunity. Clearly all such fly-papers should be impregnated with some soluble colouring-matter which would colour the water in which they were soaked. Perhaps sulphonated indigo ("indigo-carmine") would be the most suitable colouring-matter for the purpose, though the coal-tar dye known as "saffraining" would present some advantages. A mixture of sulphonated indigo and chrome-green would perhaps form the best combination for colouring solid vermin-killers. At any rate, pharmacists can do much to prevent accidental and intentional misuse of such preparations if they will habitually add sufficient of a mineral pigment to colour the powder a decided blue or green, and will take more care to record sales of vermin-killer in the poison-book than is at present the practice in some districts. The author then acknowledged the assistance of Mr. Charles Harrison, Mr. William Challaway, and Mr. J. H. Pearmain in analysing the samples of vermin-killer already referred to.

The PRESIDENT thanked Mr. Allen for his paper. If they did not discuss the matter he was sure that many of them would think over the paper and act upon it. The suggestions of Mr. Allen were valuable, not only to pharmacists, but to medical practitioners and toxicologists, and to the health of the public.

Mr. NICOLL asked if the green suggested was not in use in the manufacture of confectionery.

The PRESIDENT thought that those colours were now discarded in confectionery, and replaced by vegetable colours.

Mr. FOGGAN said that a few days ago he saw a blanc-mange coloured and ornamented with a beautiful green. If they were to adopt Mr. Allen's suggestion they might be laying a trap for themselves, and find strychnine mixed with their blanc-manges.

Mr. DAVID MACLAREN (Edinburgh) said that some confections were coloured green, and that was the danger which Mr. Nicoll referred to.

Mr. WARD (Leeds) said that some of Mr. Allen's suggestions were worthy of consideration. He did not see that any good could come of the colouring, unless it were enacted that all vermin-powders should have a definite composition, and that the percentage of chromium, as well as the percentage of strychnine, should be specified. If that were done, then he could understand that the addition of a substance like oxide of chromium would be a matter of very great moment. He thought the Pharmaceutical Society might take up the question with advantage. The hands of the analyst would be greatly strengthened if that were done and the powders were coloured with chromium.

Mr. PROCTOR said there was always a negative side as well as a positive side to a matter of this kind. One of the great recommendations of the green oxide of chromium was its very difficult solubility. But that was also one of its weak points, for a person who bought a vermin-killer so coloured might dissolve out the strychnine and leave the colour behind, thus getting the poison free from colouring-matter. (Cheers.)

At this point Sir Isaac Lowthian Bell came into the room and took a seat on the platform. His appearance was greeted with applause.

Mr. PLOWMAN said that in a case of suicide by strychnine in South Lambeth he found strychnine almost immediately, and a blue colouring-matter composed of Prussian blue, and something else which he did not identify at the time. Very likely it was ultramarine. He should like to ask Mr. Allen whether in examining the vermin-killers he found a sample that consisted of coloured arsenic. In old times the powders contained that substance, but of course strychnine could now be sold, on account of its extreme cheapness in comparison with past times. Mr. Allen said that the poison absorbed was the only active part; he (Mr. Plowman) thought there were many exceptions to that statement.

Mr. SCHACHT, as almost the only representative of the Pharmaceutical Society on his side of the chair, would like to say that there was an impression generally understood in Government circles that pharmaceutical education might be relegated to the Pharmaceutical Society, and that all matters connected with poisons and the care of the public health, from their point of view, should be absorbed by some Government department. He hoped the publication of that day's proceedings might serve in some measure to correct that impression and convey, even to the official mind, the idea that possibly pharmacists knew something of that which concerned the public health. (Cheers.)

Mr. BRANSON said that Mr. Proctor's objection might be met by a mixture of soluble and insoluble salts of chromium.

Mr. ALLEN, in replying, said that if oxide of chromium were introduced into jelly in any quantity it would spoil its transparency. With regard to the colouring-matter in confectionery, if he in his official capacity found chromium introduced for such a purpose, he should consider it his duty to report accordingly. (Laughter.) He was, however, inclined to think that such practices were entirely obsolete. As to green blanc-mange, he did not know whether the gentleman who had mentioned it was an Irishman, but green blanc-mange struck him as being an extraordinary expression. (Laughter.) He hoped that legislation on the lines of the Arsenic Act—of which he did not approve, though it was right in principle—would be extended to vermin-killers, and other articles containing poison, which were sold to the general public. It was not necessary that the Act should state the amount of the added matter, but it was desirable that it should do so, and that the colouring-matter should be chosen. He would contend that the oxide of chromium was preferable to any. It was cheap, it was wholly insoluble, could be detected with great facility, and was unacted upon,

except by strong agents like nitric acid. The facility with which it could be detected in small quantities and estimated placed it above all others for the purpose. He had mentioned in his paper that perhaps indigo-carmine would be the most suitable matter for colouring fly-papers; and a mixture of sulphonate of indigo and chrome-green would be best for colouring vermin-killers. That would meet Mr. Proctor's difficulty. He was aware that carbonate of barium was a very successful poison, but to mix that with strychnine seemed to him very curious. It looked as if it were considered that the strychnine was not good enough, and that the carbonate of barium was not good enough separately. When he said that the poison absorbed into the system was the only active portion, he limited his remarks to strychnine. He was aware that other poisons acted on the stomach.

Following this paper was one entitled

NOTE ON A SCALE OF SMALL RESIDUES.

By B. S. Proctor, F.I.C.

In washing precipitates or exhausting drugs by percolation it often becomes important to judge the amount of solid matter which the solvent is extracting. It rarely happens that the washing can be carried so far that a drop of the liquor evaporated on a clean slip of glass leaves no palpable amount of fixed residue, and, indeed, distilled water itself is rarely free from this evidence of impurity. In some instances, as in the case of morphia, for example, the residues of a drop of the washing liquid (say saturated solution of morphia), and of a drop of the washings on evaporation, show when the washing may be considered complete. In many operations where we have not this natural standard of comparison it is convenient to be able to judge approximately whether a drop of filtrate or percolate contains $\frac{1}{1000}$, $\frac{1}{10000}$, or $\frac{1}{100000}$ of a grain of fixed matter. And with the view of aiding this judgment the author has constructed a scale of residues in which the evaporated drops contained $\frac{1}{1000}$ th to $\frac{1}{1000000}$ th of a grain of several fairly typical forms of soluble matter. The materials used are calcium sulphate, potassium nitrate, gum acacia, and gum tragacanth, which afford useful standards for comparison. Mr. Proctor submitted plates in illustration of these residues, and has added a fifth series showing the same weights of suspended alumina. These showed small spots of the material like a transparency—indeed, they were simply the residues of a drop of a solution containing a grain of the soluble matter dissolved in 1,000 minims of water, a drop of this decimal dilution, and so on, a drop of the fourth dilution giving a spot representing $\frac{1}{1000000}$ th part of a grain, which was clearly perceptible to the naked eye.

The PRESIDENT, in thanking Mr. Proctor, said that it was practical chemistry reduced to the homeopathic scale.

Dr. Thresh read the two following papers on *Strophanthus*:

STROPHANTHUS PLANTS.

By Thomas Christy, F.L.S., &c.

In this paper the author referred to the want of uniformity which exists in the *strophanthus* seeds as they come into commerce. Even seeds from the same source when germinated yield plants which are often different amongst themselves. After the paper was read fresh specimens of the plants grown in his greenhouse were shown, to illustrate this assertion, and amongst a dozen or so we did not observe two which could be said to be identical. But it would be useless to attempt to give here without engravings that part of Mr. Christy's paper in which he referred to the plants. It will suffice to give the report made to him by Professor Huseman, of Gottingen, on a comparative analysis between tintures of the seeds known in commerce as "Kombé," "Hispidus," "Minor," and "Niger." Professor Huseman says:—

Both seeds of *Strophanthus Niger* belong to the series of cardiac drugs. "In their action upon the heart they are hardly to be distinguished from the African species of *strophanthus*, commonly known as 'Kombé.' I made experiments with the alcoholic extract after eliminating fatty matters with ether. The minor variety yielded 10 per cent., and hispidus about 12½ per cent. of extract. The latter, by reason of a large percentage of chlorophyll, is greener than the former, which is of a dark-brown colour. Of both extracts

1 centigramme stopped the heart's action in a frog within a few minutes; no special direct action was noticeable upon the veins, showing in this respect that the two extracts above mentioned do not differ in any way from that obtained from the Kombé, and, furthermore, no 'narcotie' action was found."

Mr. Christy then proceeded to describe inquiries which had been made by Dr. Blondel under his direction, and which resulted in the discovery that what they had taken for *S. Kombé* was really only a variety of *S. hispidus*, or the mother species, as Mr. Christy pertinently called it. Another species of the plant, known as "Glabrus of Gaboon," was next referred to. It is noteworthy in connection with this specimen that it is the same kind as Hardy, Gallois, and Polaillon used in their experiments, during which they discovered a crystallisable alkaloid.

We also understood from Mr. Christy's remarks that this is the seed which Continental chemists use in the manufacture of crystallised strophanthin. He showed one of the plants propagated from the seed. It has leaves somewhat similar to the Kombé species. Proceeding, he spoke of some suspicious seeds which he had met with, and concluded by saying that at the Paris Therapeutical Congress Dr. Dujardin Beaumetz clearly put forward as the result of his experiments with the tincture of strophanthus, that he obtained entirely a different action when he employed strophanthin, and he strongly advised medical men to keep to the tincture, as giving the best results.

THE CHEMISTRY OF STROPHANTHUS.

By Dr. T. R. Fraser.

This paper was of great length. The author first spoke of the seeds, and gave a proximate analysis of them, which was as follows :—

	Per cent.
Water	6·7
Petroleum ether extract (chiefly fat)	31·81
Ethyl ether extract (resin, chlorophyll, &c.) ..	0·845
S.V.R. extract (20 spt. to 1 of seeds) ..	8·94
Water extract { Mucilage	7·35
Albumen	1·95
Ash	<u>3·514</u>
	61·109
Undetermined	38·891
	<u>100 000</u>

A careful examination was made of the extracts obtained by means of the ethers, and after purification they were reduced to a pale greenish-yellow oil, having a sp. gr. of 0·975; but this factor varied somewhat, a pale-green oil from other seeds being 0·954, and a dark greenish-brown one 0·9267. The alcohol extract was next described. It was found to consist of

	Per cent.
Impure strophanthin	63·357
Mucilage	16·275
Resin	14·542
	<u>94·184</u>

Following this an analysis of the separated testa and cotyledons of the seeds was given, and this showed that the testa yields most of the colouring-matters and the cotyledons and embryos most of the strophanthin and oil. Having described the reactions of the alcoholic extract, the author proceeded to show that it does not contain an alkaloid, but he conclusively demonstrated the presence of a glucoside—strophanthin—and gave the following as his method for the preparation of that body :—

The active principle was precipitated by a solution of tannin from a strong solution of the alcoholic extract in water; the well-washed tannate was thoroughly mixed with recently precipitated, carefully washed, and moist oxide of lead, which was added in the quantity calculated to be necessary for the conversion of the tannin into tannate of lead; the mixture was digested for several days at a low temperature; and after it had been dried, it was thoroughly exhausted with rectified spirit, and occasionally with proof spirit. If the alcoholic solution still contained any tannin, as it usually did, it was evaporated to a syrupy consistence, and again treated as above with a smaller quantity of

oxide of lead. It was frequently necessary to adopt a third such treatment before every trace of tannin had been removed. The product was now dissolved in weak alcohol, and, if necessary, decanted and filtered from sediment; and through the clear and usually almost colourless solution a gentle stream of well-washed carbonic acid was passed for two or three days, in order to remove traces of lead. The solution was then evaporated to dryness, and the residue dissolved in rectified spirit, and after filtration ether was added to the solution to precipitate the active principle. The precipitate was dissolved in absolute alcohol, which usually left a further slight sediment, and the clear alcoholic solution was finally dried by spontaneous evaporation, and by being placed in a partial vacuum over sulphuric acid.

By this process about 65 per cent. of the active principle, strophanthin, was usually obtained from the extract. This quantity, undoubtedly, does not represent the whole of the active principle present in the extract; but the result otherwise is satisfactory, in so far as the quality of the product is concerned.

The strophanthin obtained is a colourless, opaque, and brittle substance, which is not crystalline to the naked eye, but is found to be so under the microscope. It is soluble in 55 parts of alcohol sp. gr. 796, and insoluble in ether and chloroform. An analysis of the pure body showed its composition to be represented by the formula $C_{16}H_{20}O_8$. It gives a bright green colour with sulphuric acid, with 10 per cent. nitric acid at 115°–130° F., a bright violet colour with blue streaks, and with other reagents colorations which are more or less indistinctive.

The PRESIDENT said that specimens of the plants were in the room and could be examined. They had been grown by Mr. Christy at Sydenham from various kinds of seeds. The amount of work which the paper showed had been done by Dr. Fraser was immense. The President went on to speak of the variety of the plants produced from strophanthus seeds of trade, and said that they differed so much from one another as in some cases to be hardly recognisable.

Mr. H. S. WELLCOME, being called upon to speak, said that undoubtedly Mr. Christy had dealt very comprehensively with the matter, and he would not add a word to the paper. It was well known that the very greatest care was necessary in purchasing the seeds to avoid faulty ones.

Mr. DOTT said it was evident from the appearance of some of the seeds in samples that were received that they were not genuine. In other cases it was not so easy to determine the nature of the seeds. On weighing some of them he found that they were immature.

The PRESIDENT: Do you know whether Professor Fraser has any seeds under cultivation?

Mr. DOTT: No; but the plants are cultivated in the Edinburgh Botanic Gardens.

ANOTHER DELEGATE.

Mr. THRESH announced the names of Mr. George Ward and Mr. Worfolk, of Leeds, as representatives of the Leeds Chemical Association.

The Conference then adjourned for luncheon.

On resuming Mr. Dott read a paper on

NARCEINE AND ITS SALTS.

By D. B. Dott.

In this paper the author criticises the work of Laborde, Claus and Ritzefeld, and Merck, as communicated in various papers during the last three years. After indicating that from the solubility relations of the compounds, and for other reasons, it is extremely unlikely that narceine should be contaminated with morphine or codeine, as alleged by Laborde, Mr. Dott refers to the valuable work done by Dr. C. R. A. Wright on the subject of narceine and its salts. It is pointed out that much of what has recently been published as fresh was described by Wright several years ago. This is specially true regarding the tendency possessed by narceine to form basic hydrochlorides, and the difficulty of completely freeing the base from hydrochloride. The most important point to be noticed is the degree to which the melting-point is affected by the presence of a small pro-

portion of hydrochloric acid, and possibly of traces of other compounds. This fact has doubtless greatly misled some of the previous observers as to the extent of impurity present in the samples examined. The general conclusion arrived at is that there is no evidence to show that commercial narceine ever contains impurities sufficient to affect its value as an article of the *materia medica*.

The PRESIDENT said they were glad to have a contribution from Mr. Dott in this direction. They had had former ones from him which were looked upon as standard works on alkaloids of opium. He thought they were all very much indebted to Mr. Dott. (Cheers.)

The reading of the papers now proceeded with express speed, and after the following one by Mr. Williams had been read, the rest were taken in abstract form :—

NOTE ON LEMON-JUICE.

By T. Howell Williams, F.C.S.

In the British Pharmacopoeia of 1867 lemon-juice is described as having sp. gr. 1.039 and containing 32.5 grains of citric acid in 1 fluid ounce. In the Pharmacopoeia of 1885 the specific gravity is given as from 1.035 to 1.045, and the quantity of citric acid as from 36 to 46 grains per fluid ounce. The variability of the juice is here very properly allowed for, but, as far as my experience goes, the standard for citric acid is much too high. From 30 to 36 grains per oz. citric acid would more correctly represent the amount present in lemon-juice as commonly obtained from the finest imported fruit during the winter months, and from 20 to 30 grains per oz. when the juice is pressed in summer.

On looking up the literature of the subject, I find very conflicting statements. For example: Bentley and Redwood in their "Materia Medica" give the citricity of lemon-juice as 34 grains per fluid ounce, while Mr. W. W. Stoddart, in a paper which he read at the Norwich Pharmaceutical Conference in 1868, gives as the result of the examination of eight lemons from 39 to 46 grains of citric acid, and he concludes that, should there be less than this, the lemons must have been kept too long or gathered too late in the season. Flückiger and Hanbury in the "Pharmacographia" consider 40 to 46 grains per oz. the normal quantity of citric acid; while Warington, whose experience on this subject is very extensive, states that English pressed juice contains from 11 to 13 oz. to the gallon, that is from 30 to 35.5 grains per oz.

Under these circumstances, being asked to contribute a paper to the Conference, I have thought that the results of analyses performed in the laboratory of my firm upon juice obtained by us from fruit of our own importing might perhaps be acceptable. There was no idea of publishing these results until a few days ago. Lemon-juice is with us only a by-product, and it is only occasionally that the results of analyses have been recorded, and still less often that the yield of juice has been noted. The lemons are not pressed to the full extent of the hydraulic press, as time is considered of more value than a small additional yield of juice. In one instance I find that 15,000 lemons yielded us 104 gallons of juice; each carboy of juice was tested. A case of 400 lemons pressed a few days ago yielded us 4½ gallons of juice—a very much larger proportion; but the juice was of very inferior quality. The results are given below.

The amount of acid present is ascertained by titrating 1 fluid ounce, measured with a pipette of known accuracy, with normal caustic soda, using phenolphthalein as an indicator. The number of cubic centimetres of normal soda solution used, multiplied by 1.078, gives the weight of crystallised citric acid in grains. But it must be remembered that phenolphthalein indicates an alkaline state of the solution, and in working with these quantities the neutral point should be reckoned as 0.1 c.c. less than that shown by the burette. With juice of known origin, where sophistication is out of the question, this method leaves nothing to be desired. Very careful experiments have shown that results obtained by titration are quite as accurate as those obtained by previous precipitation as calcium salt; in neither case is the absolute amount of citric acid ascertained, but simple titration tells truly the total acidity, and for our purpose we may consider this as due entirely to citric

acid. The following table shows the results obtained in those instances in which notes were kept during the past season.

Month	Lemons		Citricity Per cent.
	Number of Cases	Average per Case	
November	38	416	31.3
			33.0
			33.5
			34.5
			30.2
			30.8
			34.6
			35.6
			32.9
	25	425	29.2
	3	480	33.5
	2	486	32.9
December	1	410	33.5
	1	415	32.5
	1	420	30.3
	1	415	34.0
May	2	350	2.2
August	1	405	22.6

The PRESIDENT said it was evident they had something to learn about lemon-juice. It was clear that they should select their lemons in November and December, and not press lemons from May to August, the percentage of acid and essential oil being clearly less in summer than in winter.

Mr. LINFORD asked if Mr. Williams had noticed whether the lemons were Messina or Naples lemons. The Messina ones had the larger amount of juice, but there was very little acid in it. Some of them were quite sweet.

Mr. NAYLOR asked how far the percentage of acid was influenced by the maturity or otherwise of the lemons.

Mr. SCHACHT referred to the unfortunate habit of medical men in ordering so much fresh lemon-juice to be taken with a definite amount of bicarbonate of soda or potash. As the juice varied at different periods of the year more alkali would be required at one time than at another to neutralise the acid. He asked Mr. Williams whether the fruits imported at certain times of the year represented the fruits gathered at that time.

Mr. CONROY gathered from the author of the paper that he obtained on an average about 32 grains of acid from the fluid ounce. He had considerable experience in testing lemon-juice, and he found it to contain very much more. Taking an average of 32 grains, it only worked out at a little under 7 per cent., whereas he generally found fresh lemon-juice prepared in December, January, and February (the months in which lemon-juice was pressed, the juice being a by-product in the manufacture of candied lemon-peel) contained an average of about 8.7 per cent. of free citric acid. His mode of testing was similar to that of Mr. Williams, but having to test hundreds of samples representing puncheons, he made a standardised solution of soda, 1,000 fluid grains of which represented 100 grains of citric acid, and by testing with it he could read the percentage straight off after titration. He had frequently found lemon-juice which contained 10 per cent. of citric acid, equal to 1 lb. per gallon.

Mr. MACEWAN: Was that not evaporated?

Mr. CONROY: No.

The PRESIDENT: Was it lemon-juice imported or lemon-juice pressed in England?

Mr. CONROY said it was pressed in England by manufacturers of candied lemon-peel. The imported juice was much weaker.

Mr. W. H. SYMONS said lemons varied very much. Possibly those most suitable for Mr. Williams's purposes would not be most suitable for the manufacture of acid.

The PRESIDENT asked whether the makers of lemon-peel used Messina or Palermo lemons.

Mr. CONROY said he was scarcely able to answer that question.

Mr. CLARK (Leicester) said it was the Messina lemons that were pressed abroad.

The PRESIDENT remarked that Stoddart's results in his

paper at a former meeting rather agreed with Mr. Williams's averages.

Mr. CONROY thought that Mr. Stoddart had pressed the lemons himself. He thought when samples of many puncheons were taken they were more likely to get a correct average than when the juice of a few lemons was used. Mr. Williams had mentioned that the lemons were pressed by an hydraulic press. He knew one large manufacturer, Mr. Hartley, of Bootle, used a lemon-squeezer of his own invention. In reference to the titration, he found that if they got the lime-juice slightly alkaline it was a sufficient indicator of itself without using any other indicator. The lemon-juice turned a bright yellow with the least excess of alkali.

Mr. MCLAREN asked if peeled lemons had been dealt with.

Mr. WILLIAMS said they were peeled.

Mr. SCHACHT read a quotation from Mr. Stoddart's paper on the subject, which, Mr. Conroy said, supported his average.

The PRESIDENT said they were much obliged to Mr. Williams for bringing this matter forward. Of course they were concerned in seeing that the standard of the Pharmacopeia was not too high. When the Pharmacopeia gave 36 grains to the fluid ounce, and they found in the summer months only 26 grains in the juice, it was well that they should know what they were about.

Mr. WILLIAMS, in reply to Mr. Linford, said that the juice he treated was obtained from Messina lemons imported by themselves in quantities of about 200 cases, and specially ordered to be packed so as to arrive here quickly before they lost their green colour. There was then the largest amount of acid in them, and the longer they were kept the smaller was the quantity of acid in them. He had occasionally tried Palermo lemons, and had not found a great difference in the acid principle, although it was rather less. He had adopted all sorts of processes because they had to make the preparation of a standard acidity, and he had consequently to ascertain whether there was a deficiency or excess of acid in the juice. As the lemons ripened they became sweeter and gave more juice and less acid. He had never come across any imported lemon-juice except that which was concentrated. He was not aware that fresh lemon-juice in its normal condition was ever brought to this country. His experience with juice obtained from the preservers of peel differed from Mr. Conroy's. He generally found that it contained only about 27 grains of acid per oz. Of course it was impossible to say that it was not sophisticated, so he did not place much reliance on purchases in that way. The singular part of the thing was that he had never found lemon-juice to contain more than 36 grains per oz. in any case, and his results had been checked by many other people. He had discussed the matter with people who said that they had obtained lemon-juice from wholesale houses containing more than 36 grains. He found on inquiry at wholesale houses that they never could obtain the juice of that strength themselves, but were careful to meet the requirements of the Pharmacopœia, and added citric acid. (Laughter.)

The PRESIDENT : We want more light, gentlemen.

An abstract was then read of a paper on

TANNIN : ITS SOLUBILITIES, &c.

By B. S. Proctor.

This paper was so long that the author did not attempt to read it. He simply gave a bit here and there, and we shall follow his example. Text-books generally say that tannin is insoluble in ether. Mr. Proctor, however, tried it and found that 2 parts of ether easily dissolved 1 part of tannin. Why this anomaly? He first worked with methylated ether and ordinary tannin, so that the alcohol in the one and the water in the other might account for the difference between him and the books. Then he dried his tannin and used absolute ether, then added 20 grains at a time, with the result that when the third portion was dissolved the solution separated into two strata, one heavy and turbid, the other light, clear, and pale. Further additions continued to dissolve the lower stratum increasing and the upper diminishing in bulk till the sixth addition (total 120 grains) caused the total disappearance of the light stratum, but did not exhaust the solvent power. Three further addi-

tions were made without showing saturation. This was 180 grains of tannin in 235 grains of ether. Now a peculiar phenomenon occurred. When an ethereal solution of tannin, containing about 43 per cent. of tannin, was shaken with an equal volume of water, it separated into three strata: the bottom one thick and brown, the middle almost colourless, and the top one small, yellow, and mobile. The heaviest solution was ethereal, and contained about 33 per cent. of tannin. The lightest solution was also ethereal, and contained about 2·2 per cent. of tannin. The middle stratum was aqueous, and contained about 3 per cent. of tannin. We may, no doubt, regard all these three solutions as consisting of ether, water, and tannin, the proportions being determined by some law not as yet determined. The experiment suggests that tannin is more soluble in ether than in water; or, to use a rather old-fashioned form of expression, that there is a greater affinity between ether and tannin than between water and tannin.

A very large number of experiments were made; ether was specially dried over sodium on the suggestion of Professor Bedson, yet in this tannin dissolved in quantities sufficient to make a syrupy liquid, leaving a portion insoluble.

Looking over all his described results, there are sundry questions which Mr. Proctor felt tempted to ask.

Is the tannin retained by the water in one experiment of the same nature as that in the heavy or light ethereal solutions?

Is the portion insoluble in dry ether but soluble in moist the same nature as that which is soluble in dry ether? We might very naturally say, No; there must be two or more bodies in commercial tannin. That, however, is not absolutely conclusive.

Is pharmaceutical tannin a glucoside of digalic acid? This has been debated, but it is rather a speculation of pure chemistry than a question of practical pharmacy.

Is tannin changed by drying at 212° till it loses weight? One experiment seemed to indicate that it partially lost solubility, but that the author had not conclusively answered. It is, however, a pharmaceutical problem, and we may inquire whether the B.P. instruction to "dry the tannin in a hot-air chamber, at a heat not exceeding 212° F.," is a suitable limitation, as tannin as dry as a bone was found by Mr. Proctor to contain 10 per cent. of water.

In the paper the terms "tannin" and "pharmaceutical tannin" were used, rather than tannic acid, as writers on this subject differ in their statements, and speak of "natural tannic acid," "crystallised tannic acid," "tannic acid freed from glucose," &c., and the remarks applied to a product supposed to be obtained by the official process.

Mr. DOTT said he was not quite sure that he agreed with Mr. Proctor's conclusions. Commercial ether not only contained water but also alcohol. He did not know that there were any commercial specimens that were entirely free from alcohol, even those of 0·717 specific gravity contained traces, and tannin being soluble in alcohol, they could not really depend upon the tannin not dissolving in the alcohol. Tannin was not a definite substance, and a statement of the solubility of such a body could hardly be made with accuracy. He also pointed out that sodium was not a good agent for dehydrating ether or any substance: it did not completely remove the water.

Mr. MABEN asked if Mr. Proctor had any theory to account for the two layers.

Mr. PROCTOR said that Mr. Dott's remarks would not have been made if he had read the paper in full. He had there guarded himself by speaking of tannin, not tannic acid. With regard to dehydration with sodium, his authority for using sodium was one of the professors in that college. He should be glad to hear of a better process.

Mr. DOTT said he found that hydrate of sodium gave up a certain amount of water.

Mr. PROCTOR said he should be glad to have experimental proof of this statement. In reference to Mr. Maben's question, he had a theory that the solution consisted of the composition of the forces of the two bodies, the solvent and the body dissolved; and in that light solution the molecular movement of the ether raised the tannin to its own movement, and in the heavy solution the tannin degraded the molecular movement of the ether to its degree of movement.

In the one case the ether dissolved the tannin, in the other the tannin dissolved the ether. (Cheers.)

Mr. NAYLOR read an abstract of a paper on

WILD CHERRY BARK AND ITS PREPARATIONS.

By L. W. Hawkins, F.C.S., Pharmaceutical Chemist.

The bark of the wild cherry, *Prunus serotina*, possesses sedative and mildly tonic properties. Although its value as a tonic is due to the indefinite substance, *prunin*, there is little doubt that its introduction into medicine was brought about by the hydrocyanic acid which it yields on the addition of water. Bentley and Trimen say, "The best time for collecting wild cherry bark is the autumn, as it then yields most hydrocyanic acid, to which its properties are more especially due," and again, "The sedative action which the bark exerts on the heart depends essentially upon the hydrocyanic acid it yields." This being the case, it is obvious that if the drug is to obtain full justice to its medicinal properties, its preparations should be so made as to represent as nearly as possible the whole of the hydrocyanic acid obtainable from the bark, and that this quantity should be fairly uniform.

The amount yielded by the fresh bark varies with the time of the year, the percentage being, according to Perot, about .05 in April, .1 in June, and .14 in October. As, however, the bark is ordered to be used in the dried state, these figures cannot be taken as a standard for the strength of the preparations.

The bark should be collected in autumn, and as it deteriorates by keeping, should be recently dried. The autumn is, therefore, the most favourable time for using it. Whether or not the cort. pruni virg. of commerce is generally that collected in autumn it would be difficult to say, but as we have to use it as we get it, it is only fair to judge it as it comes. Half-a-dozen samples were obtained from leading houses, and the yield of hydrocyanic acid estimated. This was done by distilling the fine powder with water and titrating the distillate with centinormal silver-nitrate solution. The following were the results per cent.:-

(1) .079	(3) .137	(5) .160
(2) .082	(4) .107	(6) .135

The preparations in general use are the liquid extract, infusion, and syrup of the United States Pharmacopoeia, and the syrup and tincture of the Unofficial Formulary.

The strength of the liquid extract should be 1 oz. in 1 fluid oz. Commercial samples of it gave the following amounts of hydrocyanic acid in grammes per 100 cubic centimetres :-

(1) .030	(3) .000	(5) .008
(2) .000	(4) .019	(6) .016

I can only account for the negative results in Nos. 2 and 3 by supposing them to be made by some process in which the whole of the extractive was heated. The others are much below that indicated by the average yield from the bark.

A sample of the liquid extract was then made with the bark No. 3, containing .137 per cent. of HCY, the directions of the U.S.P. being strictly followed. The product was found to contain .084 per cent. From this it seems that the menstruum which remains unheated is insufficient to readily extract the whole of the acid.

Samples of the infusion, eight times concentrated, were then estimated in the same way. These should represent 32 per cent. of bark. The results were :

(1) .0029	(3) .0037	(5) .0019
(2) .0000	(4) .0000	(6) .0029

Here again the quantities of acid are much below the theoretical amounts. Nos. 1 and 4 were very much darker than the others. Both of these contained glycerine, and appeared to be made by diluting the liquid extract.

A pint of concentrated infusion was made with No. 3 bark. The bark in No. 40 powder was damped with water, left to macerate for twenty-four hours, and then percolated with water till 14 fluid oz. had been collected. This was reserved, and the percolation continued till exhaustion was effected. These last runnings were evaporated to 1 fluid oz. and added to the first portion, together with 5 fluid oz. of rectified spirit. On estimating the product the percentage of HCY

was found to be .0428, the theoretical yield being .0457. Another sample of exact U.S.P. strength, made by percolation, was found to contain the full amount.

The syrup represents 12 per cent. by weight of the bark. The following were the percentages by weight of HCY found in some commercial samples :

(1) .0007	(3) .0011	(5) .0029
(2) .000	(4) .0014	(6) .0035

These results are also below the proper yield. A sample made from bark No. 3, in No. 20 powder, according to the U.S.P. process, gave .0152 per cent., the theoretical yield being .0164.

In the same way six samples of tincture, B.P.C., were examined. The strength should be 1 oz. in 5 fluid oz., but the quantities of prussic acid found were in this case also too low, the results in grammes per 100 c.c. being :—

(1) .009	(3) .038	(5) .007
(2) .000	(4) .012	(6) .016

A sample made from No. 3 bark yielded .0228, the theoretical amount being .0274.

It is evident from these results that the preparations of wild cherry bark do not, as a rule, represent the full value of the drug, so far as the hydrocyanic acid is concerned. If the hydrocyanic acid found in the six samples of bark may be taken as the usual percentage, not one of the preparations examined can be said to be near its proper strength. This may be caused by the loss of some of the acid in keeping, or else sufficient care is not exercised to ensure its presence. Experiment shows that the infusion, syrup, and tincture may be made of proper strength, provided the proper methods be employed and the products kept free from exposure. The liquid extract does not seem so satisfactory, and the practice of making the other preparations from it by dilution should not be countenanced, unless some means be employed to make it of definite strength, as by the addition of hydrocyanic acid. Although the hydrocyanic acid exists in a very small proportion, there is no reason why this proportion should not be secured. If the preparations in use only contain a small fraction of what they should do, and these fractions vary considerably among themselves, it cannot be expected that *Prunus Virginiana* will obtain the reputation here which it is claimed to deserve in America.

The PRESIDENT said there was no reason why the preparations should not be standardised as suggested by the author of the paper. The bark had not any very large use in this country, but it had some uses, and was thought highly of in some cases.

Mr. MABEN said that his experience of the syrup was that it formerly deteriorated by keeping, but prepared according to the U.S. Pharmacopoeia it kept better, if not exposed.

Mr. WELLCOME said the freshly gathered bark had a very delightful flavour, which rarely lasted more than six months. It was in winter that they got the flavour in perfection. It was used as a flavour in the United States and for "pick-me-ups." It was claimed by many that it possessed tonic properties. No preparation should be made from the bark if it was more than a year old.

Mr. NAYLOR next read the following paper on

INFUSION OF GENTIAN.

By William Johnston.

There are many who think that the B.P. should contain recipes for the more commonly used concentrated infusions; and, in order to lead to a discussion on the subject, the author proposed the following formula for

Concentrated Infusion of Gentian.

Bitter orange peel, bruised	..	..	3	Oz.
Genetian root, bruised	..	..	3	"
Fresh lemon peel	..	..	6	"
Rectified spirit	..	..	7½	,(fl.)
Cold distilled water	..	..	15	"
Boiling distilled water	..	..	about 12	"

Mix the orange peel and gentian root with the spirit and cold water, into which the lemon peel has been previously grated. This is best accom-

plished by rasping off the yellow portion of the peel against a rough grater, afterwards thinly paring off the spongy portion of rind saturated with oil, and adding the parings to the diluted spirit. The weight of peel obtained may be found by weighing the fruit before and after peeling. Macerate for seven days, with occasional stirring, and then strain and press. Re-macerate the marc with the boiling water for twelve hours; again press; mix the various portions of liquid, and set aside for a few days, afterwards filtering and making up with distilled water to a pint and a half.

The process is suitable for manufacture on the small scale; the price, which comes to about 1s. per lb., exclusive of labour, is satisfactory, and the quality of the product is excellent. Diluted with 7 parts of water it forms a fluid exactly the same in colour, aroma, and bitterness as the freshly-prepared B.P. infusion.

The present official formula might still remain as an alternative¹ one, leaving dispensers to choose whichever they preferred. It may be objected that the recipe given would result in a weak tincture instead of an infusion; but surely this is hyper-criticism. The difference in therapeutic effect must be practically *nihil*; and if a physician did wish, for some reason, to prescribe a preparation absolutely free from alcohol he could easily write "Inf. gent. co. recent." in his prescription.

By the way, the official directions for the preparation of the tinctures of fresh orange and lemon peels might advantageously be brought into accord with the suggestion just thrown out for the manipulation of the peel.

The PRESIDENT said it was one of the curiosities of the Pharmacopœia that tincture of fresh orange-peel had to be made with proof spirit, and tincture of fresh lemon-peel with rectified spirit. He thought that the method of making tincture of fresh orange-peel was the better of the two. The peel always contained a considerable quantity of water, and although it was not sufficient to bring the spirituous strength down to proof spirit, still it brought it down, and any alteration they made should be in that direction.

MR. LINFORD said the tincture of orange-peel deposited its oil on being mixed with water; that of lemon-peel did not.

MR. WILLIAMS said much more elegant preparations were made with a tincture of the weaker spirit, and they obtained a better flavour with a weaker spirit than with rectified spirit. The finest tincture of lemon was obtained by using a spirit 16 over proof as a starting-point.

The President thanked the authors of the papers.

MR. NAYLOR read an author's abstract of the following:—

EXACT FORMULÆ FOR THE OFFICIAL ONE-PER-CENT. LIQUORS.

By C. A. Macpherson.

In this paper formulæ were first given for the nine liquors which constitute this class.

Liquor Arsenicalis.

Arsenious acid in powder ..	.. 35 grains	or 1 part
Carbonate of potassium ..	.. 35 "	" 1 "
Compound tincture of lavender ..	.. 2 fl. drachms,	3½ fl. parts
Distilled water, a sufficiency to make ..	8 fl. oz.	100 "

Place the arsenious acid and the carbonate of potassium in a flask with 4 oz., or 50 parts, of the water, and apply heat until a clear solution is obtained. Allow this to cool. Then add the compound tincture of lavender and as much distilled water as will make the bulk 8 fl. oz., or 100 fluid parts, at 60° F. (15° C.).

Liquor Arsenici Hydrochloricus.

Arsenious acid in powder ..	.. 35 grains	or 1 part
Hydrochloric acid ..	48 minims,	1½ fl. parts
Distilled water, a sufficiency to make ..	8 fl. oz.	100 "

Liquor Arsenici et Hydrargyri Iodidi.

Iodide of arsenium ..	35 grains	or 1 part
Red iodide of mercury ..	35 "	" 1 "
Distilled water, a sufficiency to make ..	8 fl. oz.	100 fl. parts

Liquor Atropinae Sulphatis.

Sulphate of atropine ..	.. 35 grains	or 1 part
Camphor water, a sufficiency to make ..	8 fl. oz.	100 fl. parts
Dissolve.		

Liquor Morphinæ Acetatis.

Acetate of morphine ..	35 grains	or 1 part
Diluted acetic acid ..	70 minims,	1½ fl. parts
Rectified spirit ..	2 fl. oz.	25 "
Distilled water, a sufficiency to make ..	8 "	100 "

Liquor Morphinæ Hydrochloratis.

Hydrochlorate of morphine ..	35 grains	or 1 part
Diluted hydrochloric acid ..	70 minims,	1½ fl. parts
Rectified spirit ..	2 fl. oz.	25 "
Distilled water, a sufficiency to make ..	8 "	100 "

Liquor Potassii Permanganatis.

Permanganate of potassium ..	35 grains	or 1 part
Distilled water, a sufficiency to make ..	8 fl. oz.	100 fl. parts
Dissolve.		

Liquor Sodii Arseniatis.

Arseniate of sodium, rendered anhydrous by a temperature not exceeding 300° F. (48° C.) ..	35 grains	or 1 part
Distilled water, a sufficiency to make ..	8 fl. oz., or 100 fl. parts	
Dissolve.		

Liquor Strychninæ Hydrochloratis.

Strychnine in crystals ..	35 grains	or 1 part
Diluted hydrochloric acid ..	54 minims, or 1½ fl. part	
Rectified spirit ..	2 fl. oz., or 25 "	"
Distilled water, a sufficiency to make ..	8 fl. oz., or 100 "	"

We print the author's modified directions in the case of liquor arsenicalis only. In all other instances the directions were on the lines of those given in the British Pharmacopœia, and the products were directed to measure a definite quantity at 60° F., and to contain 4½ grains of the active ingredient in every fluid ounce, or 1 part by weight in 100 similar parts by measure. Reference was then made to a previous paper (THE CHEMIST AND DRUGGIST, November 24, 1888, page 709), in which the inaccuracy of the present official formulæ was shown. In the proposed formulæ official data—amended where necessary—have been taken, and Donovan's solution has been made like the others instead of about 1 per cent. by weight as at present. There are some seemingly awkward fractions in the centesimal column of some of the formulæ, but they do not form any obstacle in working, and could if desired be easily replaced by others, such as .25, .5, or .75, without materially affecting the solutions; examples showing this were given. In conclusion it was said that the parts formulæ present no difficulty when the unit consists of the ounce or its multiples, but the caution was necessary not to confound grain-measures with minims. To facilitate the conversion of grain-measures into minims it was stated as a general rule for small quantities that one-tenth of the sum added to any given number of grain-measures will show the equivalent number of minims.

MR. MARTINDALE said the matter was of some importance, because the Pharmacopœia was very inconsistent at present. When they took such things as morphia solutions they were of the strength of 1 grain to 99 grain-measures. They did not produce 100 grain-measures, nor did they produce a definite weight. In these morphia solutions the spirit that was present in the solutions interfered with the number of centesimal parts by weight. When they approached the

Continental and American modes they found them consistent. They made one part of the drug to be contained centesimally in so many parts by weight. This inconsistency of the British Pharmacopœia led to another error on the other side. As a rule the medicine would be administered to the patient in a measured way, but they could not ascertain the amount of the drug in that measured part without going through a calculation.

The PRESIDENT asked if they did not on the Continent invariably weigh rather than measure in dispensing.

Mr. MARTINDALE replied that they did. They as English pharmacists rather kicked at that; they thought it would be more expeditiously and accurately done by measure.

Mr. MACLAREN remarked that he thought Mr. Macpherson had made a mistake. He had taken grain-measures as the basis for dispensing purposes, whereas they used minimis; the former was 437 parts to the ounce, and the latter 480.

Mr. YOUNG (Barnet) said that while medicines were administered by the teaspoonful or tablespoonful he did not think they needed to split straws as to the way it was measured.

Mr. MARTINDALE said the matter was very important, and even serious in hypodermic injections.

Mr. MABEN remarked that so long as they had to dispense their solutions by measure it was impossible that they could introduce parts by weight into the Pharmacopœia, which, owing to the different specific gravities, would lead to no end of confusion. He thought Mr. Maclarens had found a mare's nest, and that Mr. Macpherson's formulae were absolutely correct.

Mr. PLOWMAN said there were the prescribers to consider. It was no use their discussing the matter of weight and measure until the prescribers were educated to prescribe in a different way. As long as they adopted the present method the dispensers must follow them. The only thing to do was to ignore specific gravity, and have 1 grain in 100 minimis.

Mr. MACEWAN said that was just the point at the bottom of this. He believed the reason why the centesimal liquors were not introduced into the Pharmacopœia was owing to a desire expressed at the meeting of the International Pharmaceutical Congress at Brussels to have all potent solutions made of the strength 1 in 100. Instead of basing the strength upon 1 grain in 100 minimis, the Pharmacopœia recognised 1 grain in 100 fluid grains.

Mr. MARTINDALE said it was 1 part added to 99 fluid parts.

Mr. MACEWAN said he quite recognised the fact that the person who drew up this formula had not succeeded in making an exact formula, but what he was aiming at was 1 grain in 100 fluid grains. He did not quite succeed. If the dispenser wanted to prescribe a liquor and imagined he was getting in 10 minimis the tenth of a grain of a drug he was entirely wrong.

Mr. MACLAREN thought he was right.

Mr. MACEWAN thought he was entirely wrong. There was only one-tenth of a grain in 10 fluid grains, and he maintained that a chemist and druggist could not dispense by fluid grains, as the fluid grain was not recognised by the Weights and Measures Act. (Hear, hear.)

The PRESIDENT said the matter was one for thought and future discussion in the journals.

Mr. NAYLOR read a paper on

LIQUOR MORPHINÆ MECONATIS.

By C. A. Macpherson.

After criticising the official formula for solution of morphine bimeconate it was said that it became a question whether it would not be advisable to include this preparation in the 1-per-cent. solutions, and supersede the present tedious and inexact process by one which would yield a definite product. The following formulae were then given:—

(1)	Morphine meconate ..	35 grains or	3·5 parts
	Meconic acid ..	10 "	1 0 "
	Rectified spirit ..	2 fl. oz.	87·5 fl. parts

Mix and add a sufficiency of

Distilled water to make 8 fl. oz., 350·0 " "

when measured at 60° F.

(2)	Morphine hydrate ..	25 grains or	1 25 part
	Meconic acid ..	20 "	1·00 "
	Rectified spirit ..	2 fl. oz.	43·75 fl. parts

Mix and add a sufficiency of

Distilled water to make 8 fl. oz., 175·0 " "

when measured at 60° F.

The first formula gives a solution containing 1 per cent. of meconate, the second one containing 1 006 per cent.

It was admitted that the proposed solution would be somewhat weaker than the official one, but it was contended that this could be met by increasing the dose, and by changing the name to that indicated, which was the more correct one, there could be no misunderstanding as to what was meant, while there would be the advantage that a standard solution of a well-defined salt would be employed in place of an indefinite one of a hypothetical compound.

The following were then read in abstract by Dr. THRESH:—

THE STRENGTH OF COMMERCIAL SAMPLES OF SCHEELE'S PRUSSIC ACID.

By R. Wright, Pharmaceutical Chemist, Buxton.

It is well known that the above acid as found in retail pharmacies varies greatly in strength, and the object of this research was to ascertain whether a similar variation occurs in the strength of samples sent out by wholesale houses.

Twelve samples were obtained from several of the principal drug houses. These samples were tested by weighing 2 grammes of the acid into a flask containing 15 or 20 c.c. of solution of potash (B.P.). The mixture was diluted with distilled water, and titrated with a decinormal solution of silver nitrate, the production of a permanent turbidity indicating the end of the reaction. The percentage of HCy was found to be as follows:—

No.	Percentage of HCy	No.	Percentage of HCy
1	3·6	7	4·9
2	3·7	8	5·0
3	4·0	9	5·0
4	4·2	10	5·1
5	4·4	11	5·1
6	4·8	12	5·7

In view of the variation in the strength of this acid, and the consequent danger attending its administration in large doses, it is very desirable that a definite standard of strength should be fixed.

The Unofficial Formulary committee might usefully take the matter in hand, with a view to securing uniformity in the strength of so potent a medicinal agent.

THE RELATIVE VALUE OF CHLOROFORM AND ALCOHOL, AND MIXTURES OF THE TWO, FOR THE EXTRACTION OF ACONITE AND BELLADONNA ROOTS.

By R. Wright, Pharmaceutical Chemist, Buxton.

Quoting from Squire's "Companion" the directions given for making chloroformum aconiti and chloroformum belladonnae, the author said the processes are identical, and consist in percolating the powdered root with chloroform, the finished product being made of such strength that one fluid ounce is equivalent to an ounce of the root. The preparations named are used in pharmacy to some extent. In order to ascertain whether chloroform had any advantage over alcohol for the exhaustion of aconite and belladonna roots, and also what was the specific action of mixtures of the two in definite proportions upon these roots, two series of experiments were instituted.

In the first series 10 grammes of the root in No. 40 powder was macerated with 200 c.c. menstruum for fourteen days, the mixture being shaken daily. It was afterwards filtered.

In the second series 50 grammes of the powdered root was moistened with menstruum, and the mixture packed in a percolator. A further supply of menstruum was added, and when the liquid commenced to drop the lower orifice of the percolator was closed, and the whole allowed to macerate for three days. Percolation was then commenced, and continued until 100 c.c. percolate had been collected. To estimate the belladonna alkaloids the method proposed by

Dunstan and Short was adopted—namely, 20 c.c. of the tincture to be examined was shaken up with two successive 10 c.c. distilled water, by which means the alkaloids are withdrawn from solution in the chloroform-alcohol mixture with the alcohol, the colouring matter remaining in the chloroform. The latter is separated; the alkaloidal solution rendered alkaline with ammonia, and the alkaloids removed by agitation with two successive 10 c.c. chloroform. The mixed chloroformic solutions are afterwards evaporated in a clean tared platinum dish, over a water-bath, until the weight becomes constant. It was found that this method was not suitable for the estimation of the aconite tinctures, because the chloroform not only retained the colouring matter but obstinately refused to give up all the alkaloid; the test was therefore modified by substituting for the first 10 c.c. of distilled water mixed with the tincture 9 c.c. distilled water and 1 c.c. dilute sulphuric acid, B.P.

The result of the experiments was that from 20 c.c. of the belladonna tincture (series 1) the alkaloidal residue was .006 grammie when alcohol 84 per cent. or chloroform simply was used; .008 grammie, when alcohol 4 and chloroform 1 was the menstruum; .006 grammie from alcohol 3, chloroform 1; .007 grammie from equal parts of the menstrua; and .007 grammie from alcohol 1 and chloroform. The relative results from the second series, and also those referring to aconite, corresponded with those quoted.

The conclusions drawn were, therefore, (1) that chloroform *per se* does not nearly exhaust aconite and belladonna roots; (2) that a mixture of chloroform and alcohol is superior to alcohol alone for the extraction of these roots.

NOTE ON AN IMPURITY IN A COMMERCIAL SAMPLE OF SODIUM SALICYLATE.

By R. Wright, Pharmaceutical Chemist, Buxton.

A sample of sodium salicylate received from a good drug house had been found to be not easily and completely soluble. Some admixture was suspected, and this was found to be salicylic acid. The paper described the experiments by which this was detected.

Mr. PLOWMAN noticed that in one case there were 4 volumes of alcohol and 1 of chloroform; and in the other 3 volumes of alcohol and 1 of chloroform. He should like to know the reason for the difference.

Mr. NAYLOR said he had tested a sample of the salicylic acid, and found its melting-point coincided exactly with the salicylic acid that his firm had in stock.

Mr. GROVES (who was somewhat indistinctly heard at the reporters' table) objected to a mixture of chloroform and alcohol for the exhaustion of the roots, as the products would not mix well with oil, owing to the spirit they contained. He had worked at the subject for the Formulary Committee, and found when treating belladonna with chloroform that it yielded a very small proportion of alkaloid, and on considering the matter he thought possibly that might be due to the fact that the alkaloids existing in the roots were in a saline condition. They were not alkaloids but salts. When the alkaloid was dissolved in chloroform or ether it was very easily shaken out. The yield of alkaloid was very much larger by first treating the root with a little lime and water, and carefully drying it before treating with chloroform. The solvent was so heavy that it ran through the marc so rapidly that it had to be restrained by tapping the percolator. When so restrained and alkaliised one got a thorough application.

The PRESIDENT said the discussion on this matter showed the advantage of their coming together and discussing these points. In reference to hydrocyanic acid, manufacturers sent this out containing 4½ per cent. of real acid. It was much to be regretted that, notwithstanding attention had again and again been directed to this matter, the acid should be found of such variable strengths. He imagined that little of it was used in dispensing, but still there was no reason why it should not be somewhere near 4½ per cent.

The last paper read was on

CASEARIA ESCULENTA.

By P. S. Mootooswamy, F.L.S., Tanjore.

There are five species of casearia in Southern India, but the root of the one which gives the title to this note is the

principal one in use. The plants belong to the N.O. Samydaceæ. The root of *C. esculenta* is coming into use for enlargement of the liver, for hepatic obstructions, and piles. It is a gentle aperient, although it contains tannin in doses of 2 to 3 drachms. The author has also used it for diabetes. A decoction is made as follows:—

Root bark of casearia	3ij.
Cinnamon bark	3ij.
Aniseed	3ij.
Water	3x.

To be boiled down to 3 oz. Dose: 1½ oz. twice a day.

The water extract in doses of 20 grains is used largely in Bombay, and so also is a syrup (20 grains extract in 2 tea-spoonfuls). According to Mr. D. Hooper the drug contains three resins, 10 per cent. of tannin (resembling rhatanatannic acid of Wittstein), an organic acid (resembling cathartic acid), and, besides starch, 48 per cent. of mineral matter.

The PRESIDENT said he was glad to find that a gentleman in India, a native doctor, had sent them that communication, through one who had always shown his interest in pharmacy—Mr. David Hooper.

PRESENTATION TO THE LOCAL SOCIETY.

The PRESIDENT said their secretary referred to the Bell and Hills fund on the previous day; the Conference had had occasion to present books to associations in the different towns where they had met, and they did so on this occasion. He would call on Mr. Naylor, the secretary, to make the presentation.

Mr. NAYLOR said he did not know that he could do more than simply state that the books were now on the table. They consisted of the following, handsomely bound:—"The National Dispensatory," "The Dispensatory of the United States," "Manual of Chemical Analysis" (Hoffmann and Power), Allen's "Commercial Organic Analysis," 2 vols., Meyer's "Modern Theories of Chemistry," Prantl's "Botany," Attfield's "Chemistry," Whittle's "Pharmacy"; also "Science Papers" and "Pharmacographia," from Mr. Thomas Hanbury, in memory of his brother, Daniel Hanbury. He dared say Mr. Martin experienced just a little difficulty in selecting the books, because they had such an excellent library at Newcastle already. (Loud applause.)

Mr. MARTIN said that as President of the local association it devolved on him to receive that munificent gift on their behalf. He need not say that it was not necessary that the remembrance of their visit to the city should take that tangible form, although of course the pleasure of it was enhanced by the fact that day after day and year after year they would have before them in their library these volumes to remind them of the visit of the Conference to the city. The secretary had referred to the library they had already in existence, and in that library they were very fortunate in one sense, and unfortunate in another, in possessing a number of books which formed the library of the late Henry Deane and a number of books from Henry B. Brady. They were delighted to have the names of Bell and Hills, and also that of Hanbury, associated with their library. There was a difficulty in accepting these books, because, so far as their experience had gone, their library and museum were already in excess of their requirements, as appeared from the little use made of them, but they hoped that masters and assistants, and apprentices, and all concerned would be so stimulated by the example of the Pharmaceutical Conference, by the number of papers read, and the enthusiasm in education and research displayed that that would not be a complaint in another twelvemonth. He took it that the highest compliment they could pay Mr. Hills, the donor of the fund which had enabled the Conference to give them these books, and the highest compliment they could pay the Conference, would be that on their next visit, twenty-five years hence, those splendid bindings would be well worn and the pages well thumbed. (Applause.) He thanked them most heartily on behalf of the Association. (Loud applause.)

FORMULARY COMMITTEE.

The PRESIDENT, in moving the re-election of the Formulary Committee, said they were doing valuable work, but had not



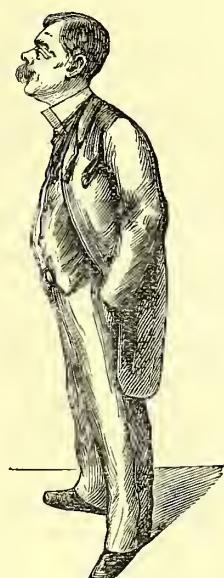
Mr. Naylor
Reads the Report.



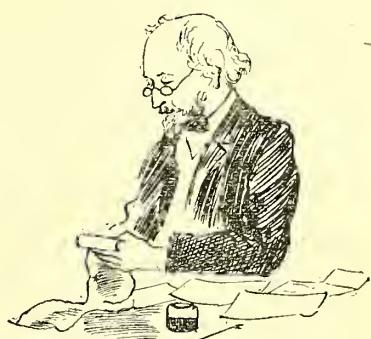
Mr. Martin
Represents Newcastle.



Mr. Clague
Arranges everything.



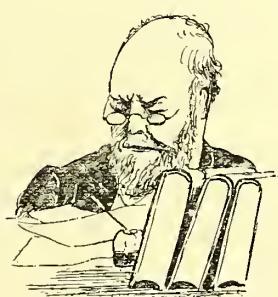
Science and Commerce.
A sketch in Southwark Street.



Mr. Proctor
Experiments with Senna.



Mr. Schacht.



Mr. Reynolds.
"The Patriarchs of the Conference."



Mr. Brady.

sufficiently advanced with it to present the result at that meeting.

Mr. PLOWMAN seconded this. He hoped the Committee would take over their duties for another year.

MEMBERS OF THE FORMULARY COMMITTEE.

W. Martindale (chairman)	T. Maben
W. A. H. Naylor (secretary)	N. H. Martin
A. C. Abraham	R. Reynolds
T. Greenish	C. Symes
T. B. Groves	J. C. Thresh

NEXT YEAR'S MEETING.

Mr. REYNOLDS, of Leeds, said a very pleasant duty devolved upon him. He had been requested by his colleagues from Leeds to lay before the Conference an invitation requesting them to do Leeds the honour of holding their meeting next year in that town. It might seem almost strange when he told them that Leeds had not yet had the privilege of entertaining the Conference. A year ago Leeds was fixed upon by the British Association as the place of meeting next year. He trusted that that Conference would accompany or immediately precede it. (Applause.) Whilst he would not use any exaggerated language in order to attract them to Leeds, he was sure there were many matters of interest they could show them. In connection with the modern university system, they had one of the three colleges of the Victoria University, and they had buildings corresponding in their scope and object to those which had been so admirably suited to their meeting in Newcastle, and their industries were of a varied nature. He would not make any boast, but he would modestly promise if the Conference visited them they would do their best to make the meeting a success. Might he just allude to the admirable report of that meeting given by the local press. He had been much struck with them because he knew the difficulties. They knew that at an early stage of the history of the Conference, when Mr. Groves read a paper, entitled "Rancidity of Fats in Ointment," it appeared "Rancidity of Facts"—(laughter)—and there appeared in one of their Leeds papers that morning a report of yesterday's meeting which he could not help reading. "The twenty-sixth annual meeting of the British Pharmaceutical Society [it was difficult to get it called the Conference] was commenced yesterday at Newcastle, under the presidency of Mr. Umbrey, of London—(laughter)—who, in his opening address, suggested the desirability of the Society co-operating with the Medical Council in making the British Pharmacopœia obsolete and illegal." (Great laughter.) [A similar report appears in the *Morning Post*, of London, and in other provincial papers.] He was sorry if that came as a shock to the President, whom he must leave to contradict it; but the press would have done them no injustice had it described them as a body of men who looked upon the British Pharmacopœia as their Bible. (Applause.) He thought if the Conference went to Leeds they would be able to show them there that they regarded the British Pharmacopœia with a reverence that could hardly be exceeded. (Laughter and applause.)

Mr. WARD (Leeds) said that, considering the magnitude of Leeds and its improvements in manufacturing industries, he thought all the members of the Conference would say that it was high time they visited it. Perhaps it was rather their boast that Leeds has a variety of industries. They would be able to show the Conference innumerable monuments of such industries in the shape of mill chimneys, and he had no doubt they would be able to find also some picturesque surroundings to the town. He heartily seconded the invitation given by Mr. Reynolds.

Dr. THRESH moved that the invitation that had been so cordially given to the Conference by Mr. Reynolds and Mr. Ward be as cordially accepted. He (Dr. Thresh) was a Yorkshireman himself. He was proud of it, and he could assure the Conference a right hearty Yorkshire reception. If any of them had been there they knew what that was. (Applause.)

Mr. CONROY, in seconding the motion, said the Conference felt much honoured by the invitation.

The motion was carried.

VOTES OF THANKS.

Mr. SCHACHT said a very pleasant duty had been placed in his hands. It was to move "that the cordial thanks of the non-resident members of the British Pharmaceutical Conference be given to the local committee, and especially to Messrs. Martin, Clague, Proctor, and Harrison, for the very successful manner in which the arrangements in connection with their visit to Newcastle had been carried out." (Applause.) It was not, he said, the first time he had had the pleasure of proposing that toast—(laughter)—he meant that motion—(applause) for they were extremely well received everywhere by their fellow-pharmacists. It was not always, though, that such arrangements were made as had been the case in Newcastle, and they thanked the local committee most heartily. The committee had thrown a spark of originality into their arrangements, which he thought was unique, by the special arrangements they had made for the ladies. He knew the ladies had fully appreciated these.

Mr. BENGERS said he had the greatest pleasure in seconding that resolution. He was sure they could have nothing but admiration for the very successful efforts of the local committee to provide for their comfort and convenience.

The motion was carried.

Mr. MARTIN, in the absence of the secretary, acknowledged the thanks, and said that if they had given satisfaction it was the full reward of their efforts.

Mr. CLAGUE said it would be absurd for him to say that there had been no work; but that work had many redeeming features about it, for it brought one into contact with the most genial good fellows that pharmacy had. Like virtue, it carried its own reward. (Applause.)

Mr. PROCTOR said it was agreed among the local committee that Mr. Clague was to take all the labour, Mr. Martin all the glory—(laughter)—and what about poor Proctor? The old fellow had got almost past work. Put him into a place to fill up a hole, and make him look respectable. He could do that nicely, and, if they were grateful for that, they were welcome.

Mr. G. S. WOOLLEY, Manchester, moved a vote of thanks to the President, Principal, and Council of the College of Science for having placed that building at their disposal. He spoke highly of their kindness, and thought Newcastle had every reason to be proud of its buildings.

The motion having been agreed to, Mr. Martin acknowledged it on behalf of his colleagues on the College Executive.

ELECTION OF OFFICE-BEARERS.

Mr. REYNOLDS moved the adoption of the following gentlemen as members of the Committee:—

President, Mr. Charles Umney; *Vice-Presidents*, Messrs. M. Carteighe, Kinnimont, Plowman, and Smeeton; *Hon. Treasurer*, Mr. W. Martindale; *Hon. Secs.*, Dr. Thresh and Mr. W. A. H. Naylor; *Members of Committee*, Messrs. Gerrard, Green, Kirkby, Ransom, Dott, Martin, Holmes, and Taylor; *Local Sec.*, Mr. Branson; *Auditors*, Messrs. Ward & Rheeders.

A formal ballot was taken, with the unanimous approval of the meeting, and the gentlemen named were declared to be elected.

THANKS TO THE PRESIDENT.

Mr. GROVES moved a vote of thanks to the President for the able manner in which he had presided. He referred to the rapidity and courtesy with which the Chairman had got through the business, and also made special reference to his opening address.

Mr. PROCTOR seconded the motion, and said it had been a great pleasure to him to hear the remarks the Chairman had made on the various papers.

The motion was heartily agreed to, and

The *PRESIDENT*, in reply, thanked them for the great kindness with which they had received him there, and also for the renewal of their confidence in placing him in the position of President on the next occasion. It had been a great source of pleasure for him to come there and meet old friends who were almost grey-headed when he was commencing twenty-five years ago. He looked forward to the time when the young men of the present day would occupy the highest positions. He had only to look to the training and help the Pharmaceutical

Society and the Conferences had been to him as a younger man, and he could confidently advise the young men now to take their part in it. (Applause.)

The Conference then terminated.

EXCURSION.

After some of the members had enjoyed afternoon tea (which was excellently served on this day in the local secretary's library) they started on an excursion down the Tyne by a special steamer. The weather was showery, however, and for that reason the sail was not so enjoyable as it might have been.

SMOKING CONCERT.

At 9 o'clock on Wednesday evening Mr. S. Plowman took the chair at a concert held in the dining-hall of the County Hotel. Fully 100 gentlemen were present, and the proceedings were of a very lively character, the programme being an excellent one. Meanwhile the ladies were in the Theatre Royal extracting amusement from "Faust up to Date."

LIST OF VISITORS.

Aken, J. D., Newcastle
Allen, A. H., Sheffield
Anderson, A. B., Dundee
Anderson, D. L., Musselburgh
Anderson, M., Dundee
Aston, W., Tarporley
Atkins, S. R., Salisbury
Atkinson, J., Tynemouth
Baden-Benger, F., Manchester
Bain, J., Liverpool
Ball, A., London
Barclay, T., Birmingham
Baxter, G., Chester
Baxter, W. J., Coleraine
Beggs, G. D., Dalkey, Ireland
Bell, C. B., Hull
Bell, Sir I. L., Newcastle
Bell, J. H., Huddersfield
Bird, F. C. J., London
Bird, Miss, Bath
Black, W., Gateshead
Bourdas, J., London
Bowen, J. W., London
Branson, F. W., Leeds
Brayshay, T., Stockton
Bremridge, R., London
Broomhead, G. E., Aberdeen
Brown, Harriet C., Dublin
Burton, H., St. Ives
Carr, W. P., Berwick
Chaplin, J. L., Wakefield
Clague, T. M., Newcastle
Clarke, C. G., London
Clark, J., London
Clark, J. W., Leicester
Clark, R. N., Jarrow
Coats, J. T., Edinburgh
Coleman, A., Carlisle
Collier, H., London
Cross, W. G., Shrewsbury
Dakers, J. J., Newcastle
Dott, D. B., Edinburgh
Dunn, J., Newcastle
Dunstan, W. R., London
Dyson, W. B., London
Farley, T., Leeds
Farthing, J., Spennymoor
Foggan, G., Bellington
Forbes, J. W., Bolton
Ford, C. B., Newcastle
Gerrard, A. W., London
Giles, W., Aberdeen
Gilmour, W., Edinburgh
Glazier, W. H., East Molesley
Green, J. R., London
Greenwell, R. H., Chester-le-Street
Grose, H. M., Swansea
Groves, T. B., Weymouth
Gwynne, E., Woolwich
Hammond, W. H., Hull
Han, P., Newcastle
Harrison, J., Sunderland

Hatcham, W., Bonnyrigg
Hodgkin, J., London
Hudson, T. H., Liverpool
Hughes, Jas., Swansea
Hunter, F. W., Newbottle
Hunter, Mrs., Newholt
Ince, J., London
Jackson, Dr. W. J., Manchester
Jewell, J. R., London
Johnston, J., Aherde
Johnson, T., Wigan
Kay, J. P., Aberdeen
Kemp, H., Manchester
Kerr, C., Dundee
Kinnimont, A., Glasgow
Kitchenham, J., Sunderland
Leigh, M., Brighton
Linford, J. S., Hull
Lyle, W., Berwick
Maben, T., Hawick
Macadam, S., Edinburgh
MacEwan, P., London
Mackenzie, J., Edinburgh
McLaren, D., Edinburgh
Maitland, P. C., London
Martindale, W., London
Mason, A. H., London
Mathews, J. H., London
Meadows, C., Leicester
Miles, C. J., London
Milner, T., Consett
Mitchell, J., Inverness
Mitten, Rose E., Hurstpierpoint
" Flora,
Naylor, W. A. H., London
Nesbit, J., Edinburgh
Newbigen, J. L., Alnwick
Newholme, G. T. W., Sheffield
Nichol, J., Partick, Glasgow
Nightingale, J. C., London
Oxon, D. H., Newcastle
Park, F., Newcastle
Pasmore, F., London
Pattison, J., Aherde
Pattinson, J., Newcastle
Perkin, J., Brook, Ripon
Phillips, J., Wynn
Plowman, S., London
Potts, R., Newcastle
Proctor, B. S., Newcastle
Raine, R. W., Middleton, Teesdale
Ransom, H., Hitchin
Ranken, C., Sunderland
Reynolds, R., Leeds
Rheeder, T., Newcastle
Richmond, R., Leighton
Robinson, A. W., Clapham
Robinson, J., Stanley
Robson, T. J., Gateshead
Rowell, T. B., Newcastle
Russell, J., Dundee
Savage, W. D., Brighton

Schacht, G. F., Clifton	Umney, J. C., London
Schofield, Alice, Morpeth	Ward, Edith, Leeds
Schofield, F. E., Morpeth	Ward, G., Leeds
Shenstone, W. A., Bristol	Weddell, B., Newcastle
Shepherd, T., Chester	Weddell, G., Newcastle
Shepherd, J. W., Settle	Wellcome, H. S., London
Siebold, L., Manchester	Wellings, W., Liverpool
Simpson, H. D., Louth	Wells, Mary A., Dublin
Smith, J. T., Radcliffe	Wells, W. F., jun., Dublin
Spargo, H., Newcastle	Williams, Emeine, London
Stanford, E. C. C., Glasgow	Williams, T. H., London
Stroud, J., Bristol	Wheeler, C. G., Chicago, U.S.
Stuart, C. E., Newcastle	Wood, C. Granville, Oldham
Stuart, Mrs., Newcastle	Wootton, A. C., London
Symons, W. H., London	Wrenn, W. A., Taunton
Taylor, G. S., London	Wright, A., Newcastle
Thresh, J. C., Manchester	Wright, Alice H., London
Todd, W. J., Sunderland	Wright, C. R. A., London
Towersey, A., Clifton	Wright, T. R., London
Turner, A., Kelso	Young, R. F., Barnet

THURSDAY'S TRIP.

About two hundred pharmaceutical trippers, including a larger proportion of *le beau sexe* than usual, joined the special train which had been provided to take them from Newcastle to Hexham. The morning was dull and rainy, but it improved as the day went on. Messrs. Gibson and Riddle acted most efficiently as guides when Hexham was reached, and the old grammar school endowed by Queen Elizabeth, the old Manor House, once used as a prison, and the Moot Hall, where courts were held, all received their share of attention. At the Abbey Church, the principal attraction of the place, an organ performance was given. Mr. Gibson gave a very interesting historical description of the famous old church, which, it appears, was commenced in 1180 and was finished about the year 1250. On the same site, however, existed an older church, dating from the seventh century. This, however, disappeared in the ninth century, though the crypt and sanctuary-chair belong to the older building. Some members of the party afterwards visited the Duke's house, while others inspected the fine new aerated-water works lately erected by Messrs. Bell & Riddle. Before luncheon another photograph of the Conference party was taken, the Abbey being utilised on this occasion as a background. An excellent lunch in the Town Hall followed, the chair being occupied by Mr. N. H. Martin. After lunch Mr. Martin toasted the Conference, and Mr. Umney replied. Mr. Atkins proposed a vote of thanks to the local committee, and especially mentioned the names of Messrs. Gibson, Riddle, and Clague, who had so successfully exerted themselves for the pleasure of the visitors. The party then proceeded by special train to Rothbury, admiring on the way the charming scenery of the North Tyne valley. From Rothbury they were conducted to the beautiful grounds of Lord Armstrong, at Craigside, romantically situated on the side of the mountain, and reached by paths which pass by wood, stream, and rocky passes. The first thing which interested pharmacists was the electric generating machine, driven by a water-wheel equal to 40-horse power, and giving force for the electric light used throughout Craigside. The view from the terrace is charming, and the visitors were loth to leave, for the weather was now fine. Returning to Rothbury, the company assembled in the Jubilee Institute, where tea was served, which was voted the best meal of the meeting. The journey was resumed at 6.10, and Newcastle reached between 8 and 9, all agreeing that this excursion was one of the most enjoyable which the Conference has ever had, thanks to the organisers. Some half-dozen of the excursionists had their photographic came as with them, and, though the day was dull, they got several nice pictures.

U.S. PHARMACOPOEIA.—We have frequently said that this book would be more popular in the States if it were published at a cheaper price. Our suggestions have told: Americans have taken up the idea, and we leave it to them to work it out. "We are confident," says a paper which takes advantage of the idea, "that we will have many supporters in our desire for a cheaper volume, and would particularly request all interested in the matter to give expression to their views."

**TRADE "SANITAS" MARK.
DISINFECTANTS**

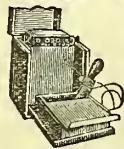
(FLUIDS, POWDER, SOAPS),
NON-POISONOUS, PLEASANT, AND BEST
Gold Medals, Calcutta 1884, Paris 1885, Antwerp 1886, Ostend 1888.

KINGZETT'S BACTERICIDES

Particulars sent on application to

THE "SANITAS" COMPANY, LIMITED,
Letchford's Buildings, Bethnal Green, London.

MEDICAL ELECTRICITY.



EVERY DESCRIPTION OF
Galvanic, Faradoid, and Electro-Magnetic
Machines and Electrodes, Galvano-Cautery and
Lighting Instruments.

Lists free. Descriptive Catalogue, 100 illustrations,
32 pages, 4 stamps.

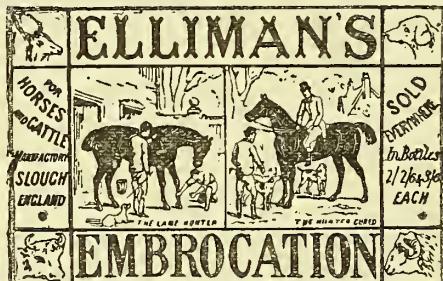
GENT & CO., LEICESTER.

**FINEST QUALITY
PURE STARCH POWDER**

In 50-lb. and 1-cwt. Bags, 26s.; [3]
In 7, 14, and 28 lb. Bags, 28s. per cwt., bags included.
DELIVERED FREE IN LONDON.

G. S. MUMFORD, FARRINGDON ROAD, E.C.

SHOW CARDS, 24×17 or 17×12,
Free to any Address in the United Kingdom.



See First Page, facing inside of front of Cover, in this Issue for latest particulars.



See Illustrated Adver-
tisement on page 50
(bottom folio), Sept.
14th issue.

THE BEST NATURAL APERIENT.

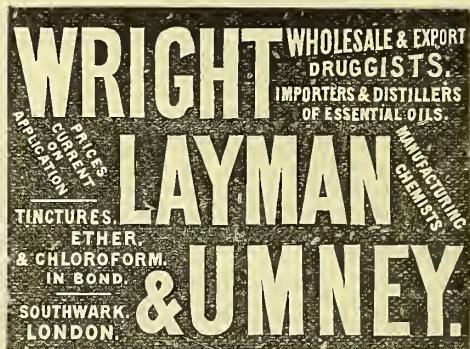
The APOLLINARIS COMPANY (LIMITED), London, beg to announce that, as numerous Aperient Waters are offered to the public with marks, names, and designations very similar to those which are used for the HUNGARIAN APERIENT WATER so long imported by them, they have now adopted an additional Label of their own, comprising their REGISTERED TRADE MARK OF SELECTION, which consists of

A RED DIAMOND.

This Label will henceforth also serve to distinguish the Hungarian Aperient Water sold by the Company from all other Aperient Waters.

DEMAND THE DIAMOND MARK.

Of all Druggists and Mineral Water Dealers. [1]



SPONGE! SPONGE!

THE MOST RELIABLE HOUSE IN THE TRADE.
The Best and Largest Assortment to select from.

HARRIS & CO., SPONGE IMPORTERS
65 BATH ST., CITY ROAD (Opposite the Vestry Hall), LONDON, E.C.

All orders throughout the United Kingdom are sent on approval Carriage Paid both ways, and selected to suit the requirements of intending purchasers.

We cultivate Competition. COMPARE OUR QUALITY AND VALUE with that of other houses and judge for yourselves. Shipping Orders receive the personal superintendence of one of the principals.

**SILICATED CARBON FILTERS
AERATED PATENT MOBILE BLOCK.**

See Advertisement, page 20 (bottom folio).

STERN'S PUMILINE
ESSENCE, EXTRACT,
JUJUBES, SOAP,
PLASTER (St. Dalmas).

62 GRAY'S INN ROAD, W.C.

Fletchers' Concentrated Liquors

See DIARY, 1889,
Pages 17 and 18.

EDITORIAL NOTES.

PHARMACY FROM NEWCASTLE.

THE British Pharmaceutical Conference is not yet dead. Unhappily its financial condition is somewhat precarious, but there is a rich, and, apparently, inexhaustible, mine of usefulness in the contributing members themselves. They have come forward this year with communications which exceed in number the contributions in any year since 1885, and, what is perhaps better, these papers are thoroughly profitable to pharmacy, and have brought out a flood of talk, less sprinkled with compliments and more full of "points" than usual. The creation of the latter element is due in an immense degree to the thoroughness with which the Presi-

dent managed the meeting and directed the discussions. Every subject which was brought up he seemed to know something about, and that not from books. Consequently the lead was always towards the direction of adding to what was given in the papers. We have, even more fully than formerly, reported the discussions, for we think that it is deserving of precise and prompt record. This will, doubtless, be studied at leisure, and here we may briefly record the general impression of the proceedings.

Tincture of Senna. Mr. B. S. Proctor, the veteran Newcastle pharmacist, was the first to be called upon, and he justified the compliment by a very characteristic paper on *tinctura sennæ*, B.P. Mr. Proctor has come to the conclusion that it is a mistake to use proof spirit for this preparation, as the alcohol precipitates the active principle of the drug. He proved to the satisfaction of the meeting that rectified spirit does not extract the active principle—a fact, by the way, which is somewhat ancient, for *liquor sennæ dulc.* of at least one maker is known to have been made from senna which has previously been freed from bitterness by rectified spirit. Mr. Proctor also found the tincture to be inert, and he had several suggestions to give—amongst them that it should be omitted from the Pharmacopœia. This view, however, did not meet with favour. Mr. Groves, an expert in the subject, crystallised the opinions of the majority by saying that a weaker spirit would make an effective preparation. There was much said about the active principle of the drug, but the meeting on the whole did not show itself to be so conversant with the literature of the subject as it might have been. At any rate, there was nothing new in that connection.

Papain and Pepsin. Mr. A. Ball almost succeeded in making the Conference lose its dignity over his paper. He showed that papain has weak proteolytic power, and that pepsin is to be found in the market which will dissolve over a thousand times its weight of egg albumen. He also criticised the Pharmacopœia pepsin very severely, but, we think, justly. It is a ridiculous product. When Mr. Ball proceeded to tell the meeting, however, how a pure pepsin should be made, he left his hearers decidedly "foggy," and it cannot be said that we are the better for what was said. The discussion which his communication provoked was slightly acrimonious. There seemed to be a disposition to get the author into a corner, and the endeavour to get at a definition of the powers of "pure pepsin" did not lead to a definite result.

Soluble Bottles. There was much quaint humour in the next paper. It was by one of the "ancients" of the Conference—Mr. Richard Reynolds—who endeavoured to answer the question, "Are glass bottles soluble?" He proved that they are: even water seems to affect them, while alkalies and acids have a more pronounced effect. Dr. Thresh made a valuable addition to the communication, his remarks on rain water showing that that mild liquid is acid in reaction, and becomes neutral or alkaline in glass bottles, owing to its decomposing action on the alkaline silicates of the glass. It should also be noted that English-made bottles were generally agreed to be worse than foreign ones, because they contain lead. It must not be supposed, however, that the subject is entirely new to pharmacy. Even the Pharmacopœia, reviled as it is, directs lime water to be kept in bottles free from lead; and chemical literature contains several references to points which were discussed on Tuesday.

Stramonium Extract. Mr. Gerrard's paper on this subject, which was next read, is destined to modify the existing official method of preparing the extract. Circumstances compelled him to omit the washing with ether,

and, therefore, to use proof instead of rectified spirit to exhaust the seed. The result was an extract containing so little oil that only a fortieth amount of the ether required to wash the seeds was necessary for cleaning the extract. Moreover, the yield of extract by both methods was found to be practically identical (about 4½ per cent.), and their percentage of daturine was also about the same—2·15 to 2·2 per cent. The short discussion on the paper showed that wholesale houses are not in the habit of using ether. This fact substantiates with good force the remark which we made last year, that much good material can be provided to the Conference by those who have the direction of manufacturing laboratories.

Scale Preparations. The manufacture of scale preparations has not, we believe, ever been carried to practical success on a small scale, otherwise we would have expected that Mr. Proctor would have disposed of the objection which he had to commercial *ferri et ammon. cit.* by telling chemists how they could make the salt themselves. But he did not. He found that two simple solutions of the salt in water deposited ferric carbonate and sulphide, and he proved conclusively that some specimens contain an inordinate amount of sulphate—basic sulphate he suspected—owing to improper mixture of the alkaline and iron solutions. We did not observe, however, any connection between this fact and the spoilt mixtures—indeed, Mr. Proctor did not attempt to explain the mixture. The cause of the spoiling must be looked for elsewhere, and two reasonable explanations were given—one that weak solutions of the citrate do spoil quickly, and that this is probably due to the citrate containing the germs of decomposition before it is scaled. It also appears from the paper and discussion that the salt is more uniform than it used to be.

Easton's Syrup. Mr. Proctor's young partner followed with a paper on Easton's syrup, the point of which was that it is exceedingly liable to solidify in cold weather. This solidification is due, he found, to the formation of a composite deposit, in which quinine is the principal factor. It is only formed when there is a certain amount of sugar in the syrup; hence Mr. Clague suggested to keep this element at a lower percentage than usual. He also preferred Easton's original formula. Considerable difference of opinion was shown in the discussion, but there was unanimity in regard to sugar being a cause of trouble, and the interesting facts were brought out that it is acid phosphate of quinine which is precipitated, and that an excess of acid is decidedly objectionable in alkaloidal solutions. There is an analogy here between ammonia and the alkaloids. In reference to Mr. Clague's recommendation of Easton's formula, we may point out that the syrup is decidedly thinner than any other; some chemists also precipitate and wash the quinine, thereby getting rid of much of it.

Nitrous Vitriol. Mr. Pattinson was not aware of Mr. Naylor's 1885 paper on the effect of nitrous vitriol on ginger ale, otherwise he might not have read his paper. He showed that nitrous vitriol used in the manufacture of ginger ale makes it turbid, a fact which was pointed out in this journal last week.

Ipecacuanha. Considering the popularity of their subject, it is not surprising that the papers communicated by Messrs. Braithwaite and J. C. Umney were so well received. In the first paper the authors showed that fluid extract of ipecacuanha may be readily standardised to represent 1·25 per cent. of emetine, this being done by estimating the alkaloid volumetrically, the extract having previously been freed from extractive matter by means of lead acetate. They proposed further to use the standardised fluid extract for making the wine; and in the second paper gave excellent

reasons for this by proving that the B.P. 1867 wine contained as much as 0·0614 per cent. of emetine, while B.P. 1885 wine made from the same root only contained 0·0406 per cent. The loss in the latter case is due to the evaporation of the extract to dryness. Mr. Blunt, in a paper read after these, suggested a very simple method of estimating the value of the wine, viz. by adding an excess of Mayer's solution to the de-alcoholised wine, and estimating the excess of the Mayer with centinormal mercuric chloride. The discussion on the papers did not elicit any facts particularly noteworthy, except that the speakers, one and all, complimented Mr. Umney, jun., on his work.

Alkaloidal Hypophos- The paper which Mr. H. W. Jones submitted was a very useful one. He showed that morphine and strychnine readily dissolve in hypophosphites. phosphorous acid to form perfectly neutral solutions. Thus in the case of morphine he found it possible to make a solution four times the strength of the official hypodermic injection; and it was pointed out in regard to strychnine that with hypophosphorous acid in equal amount to the hydrochloric acid employed in making liquor strychniae, a preparation is obtained which does not deposit the alkaloidal salt in cold weather.

Methyl Chloride. Mr. Martindale's note on a new mode of using this liquefied gas brought Tuesday's proceedings to a close. He showed that by using a *thermo-extractor* (?) the chloride is kept liquid, though exposed to the air, sufficiently long to be taken up by a tampon and applied to any part desired. This note created much interest.

Euonymus. In the paper communicated by Messrs. Naylor and Chaplin it was shown as the results of a chemical inquiry that the root-bark of euonymus contains a number of principles such as Wenzell has already described, but the authors failed to find euonic acid and asparagin, but in place of the latter they had obtained evidence of the presence of atropurpurin, and on other points they showed that the knowledge which has been handed down to us from Wenzell's time requires modification. Atropurpurin is a new body of the nature of a glucoside, and the authors are continuing their research on the purely chemical aspect of the matter. The discussion added nothing to what they said.

Mr. Siebold's Papers. The editor of the Year-book gave the Conference two very interesting demonstrations. In the first he explained some medical and chemical misconceptions regarding lithia. Salts of this base are used in medicine on the supposition that uric acid forms extremely soluble compounds with them, but Mr. Siebold finds that this is quite erroneous. Nevertheless, the Conference seemed somewhat undecided to give lithia a back seat, but they accepted with readiness Mr. Siebold's statements regarding the presence of arsenic in glycerine. It is astonishing, even alarming, to learn that nearly all samples showed evidence of the presence of arsenic. One, it is true, and that one the glycerine which is generally used by dispensers, was found to be above suspicion, but, as Mr. Siebold has already demonstrated that white-glass bottles contain arsenic which glycerine is capable of dissolving, it is obvious that we are on a line of danger which we must straightway get off. We call attention to the very clever test for arsenic which Mr. Siebold showed the Conference—it depends upon the action of arseniuretted hydrogen on corrosive sublimate, and is worthy of common application. The discussion on the paper was animated, and full of theories as to the origin of the arsenic, but it took us no further than the main fact that pharmacists must be on their guard.

Lead in Water. Pharmacists as a body have not had the opportunity of discussing the action of water on lead, so far as the latest phases of the subject are concerned. Mr. Reynolds gave them the opportunity, but nothing new was elicited except Mr. Reynolds's own suggestion that a printed statement should be provided by analysts regarding the best way to collect water for analysis, and the fact that Glasgow children do not suffer from rickets because of the softness of Loch Katrine water, but because they do not eat enough porridge and milk.

Vermi- Mr. A. H. Allen's paper on vermin-killers was a really valuable one. He gave a table showing **killers.** the composition of a large number of preparations, which will form the basis of practical formulæ, and he made the suggestion that such powders should be made of a green colour with oxide of chromium. This suggestion was received with mixed favour, but on the whole the feeling of the Conference was that Mr. Allen had enlightened pharmacists considerably on the subject of vermin-killers.

Narceine. Mr. Dott's paper was a useful critical review of the literature of several years past on this opium base. In opposition to the view of some authorities Mr. Dott does not find evidence that narceine is contaminated with morphine, codeine, or other impurities sufficiently to affect its medicinal value.

Lemon Juice. Mr. T. Howell Williams read a paper on lemon juice, such as only persons in his position could compile. Being an importer of lemons for the sake of the peel, he obtains the juice as a by-product, and his determinations of the acidity of this juice showed that the B.P. acid standard is too high. November juice gave acid equal to 30·2 to 35·6 grains per oz., December juice 29·2 to 34 grains, while summer juice did not go above 29·2 grains in May and 22·6 grains in August. It is obvious that winter juice only should be used, and, although in the discussion Mr. Couroy gave it as his experience that the percentage of acid is higher, the feeling of the meeting was that the official standard should be lowered.

Tannin. We merely call attention here to Mr. Proctor's paper on the solubility of tannin in ether. Some text-books say it is not soluble, although the best tannin in commerce happens to be purified from the ethereal solution, and Mr. Proctor proved that it is soluble.

Concen- Mr. W. Johnston endeavoured in his paper on infusions of gentian to raise a discussion on the trated advisability of introducing concentrated infusions. **Infusors.** He submitted a formula for a gentian preparation, the principle of which was maceration of the drugs in weak spirit for seven days, and subsequent infusion of the marc in boiling water. The product when diluted afforded an infusion identical in appearance and taste with the fresh article. Incidentally Mr. Johnston suggested that the fresh orange and lemon peel for the respective tinctures should be rasped with a grater. The only point discussed by the meeting in regard to the papers was the advisability of having a weaker alcoholic menstruum for tincture of lemon.

Wild Cherry. Mr. L. W. Hawkins next contributed a paper on "Wild Cherry Bark and its Preparations," and it proved to be a valuable addition to pharmaceutic knowledge. Hitherto, as stated last week, we have had no idea of the hydrocyanic strength of the commercial bark. The autumn-collected bark, according to Perot, yields 0·14 per cent. of the acid in the fresh state. Mr. Hawkins found the average of dried bark to be 0·116 per cent., the lowest of six samples being 0·079, and the highest 0·16 per cent. Commercial liquid extract, concen-

trated infusion, syrup, and tincture, were all found to be much below the theoretical strength. Experiment showed, however, that it was not possible to make the fluid extract (1 in 1) representative of the bark; on the other hand, the concentrated infusion, syrup, and tincture could all, when carefully made, be obtained within a fraction of the theoretical strength. The paper helped to show that concentration as commonly carried out really means evaporation and consequent dissemination of the active principle. Mr. Wellcome confirmed, as an American pharmacist, the statements that the winter bark is best, and that it should be used as fresh as possible.

"Exact Formulae for the Official One-per-Centesimal Cent. Liquors" were communicated by Mr.

Liquors. C. A. Macpherson, of Edinburgh. There are nine of these in the Pharmacopœia, and none of them is exactly 1 in 100. It will be remembered that this whole subject was discussed at considerable length in this journal last October, and on that occasion all the objections to the present formulae were brought out. Professor Attfield was aware of that discussion—indeed, wrote us a letter on the subject—but the fact that there was no mention of the matter in his last report on the Pharmacopœia seems to show that it is not regarded seriously in official quarters. Last autumn Professor Attfield said, if pharmacists, "instead of straining at gnats and swallowing camels, would state whether they do or do not find the use of 'parts' to be convenient and advantageous, they would materially aid future Pharmacopœia compilers."

Liquor Morphinæ Bimeco- Mr. MacPherson in his second paper proposed to change the name of liquor morphinæ bimeconat. Meconic acid, we may say, is di-basic. **natis.** At first the Pharmacopœia gave the formula as $H_3C_7HO_7$, but, as pointed out in THE CHEMIST'S AND DRUGGIST'S DIARY, 1886, "if the formula given means that the 3 hydrogen atoms at the beginning have the same function, it is erroneous. The editors are usually careful to give the water of crystallisation, but in this case they have failed to do so. The composition is indicated by $C_7H_4O_7$, $3H_2O$." In consequence of this the formula is given in the "third reprint" as $H_2C_7H_2O_7$, $3H_2O$. The amount of morphine directed to be used is only sufficient to saturate half of the acid employed, hence (we may charitably suppose) the word "bimeconate." Mr. Macpherson also proposes to make a 1 per cent. solution of the salt, using the meconate itself, or morphine hydrate, both of which are obtainable. This would obviate the tedious official precipitation and washing process. Moreover, meconate of morphine has long been used in pharmacy, and is a stock article. A somewhat animated discussion followed the first of these papers, in which there was a general agreement with the author's observations.

Mr. Wright's Papers. The communications which Mr. R. Wright submitted did not, owing to the lateness of the hour, receive the attention they deserved.

He showed, for instance, in regard to the popular preparations chloroform of belladonna and of aconite, that the menstruum used is incapable of extracting even a fourth of the alkaloids in the drugs, and that it is better to use a mixture of chloroform and alcohol. Mr. Groves stated that his experience was, that if the drug were first treated with an alkali which would free the alkaloid from combined organic acid, that chloroform would then extract the whole of it, and the product would mix clear with oil—an advantage which Mr. Wright's preparations did not have. The same writer reported considerable variation in Scheele's prussic acid of trade, some being as low as 3·6 per cent., and others as high as 5·7

per cent., the average being 4·4 per cent. This is remarkably near what Mr. Umney said wholesale houses try to make it, viz., 4½ per cent. Mr. Wright had found 2 per cent. of free acid in salicylate of soda. This, if we mistake not, has been found before.

After a short abstract of Dr. P. S. Mootooswamy's paper on cascaria esculenta root had been read the Conference proceeded to elect office-bearers and conclude business. Considerable satisfaction was felt when the invitation to Leeds was given and accepted, and, although Mr. Umney's name, as president-elect, was before the members all the afternoon, something not far short of wild enthusiasm was evinced when the actual election was declared. In no happier way could the members have shown their appreciation of Mr. Umney's conduct in the chair, and if there is anyone whom we should feel inclined to bracket with him as bringing about the success of the meeting we should say that it was Mr. T. M. Clague, the local secretary, who worked as quietly and effectively for the comfort of every member as the most critical could expect. The attendance at the Conference, as recorded in the book, was less than it has been recently, but numbers were made up by enthusiasm, and the average attendance was, perhaps, larger than usual.

THE PRESIDENT ON THE DRUG TRADE.

MR. UMLEY had the largest audience at Newcastle on Tuesday which has ever listened to an address from the President of the British Pharmaceutical Conference. Pharmacists were happily reminded by Mr. Clague that the year 1863, which recorded among other events the origin of the Association in Newcastle-on-Tyne, witnessed also the distinguished success at the London School of Pharmacy of the President of the Conference, bracketed with another gentleman who has also since made a reputation in the pharmaceutical world, and likewise in the presidential business. During the twenty-six years that the Conference has been travelling around the United Kingdom, its actual President has been contributing largely towards the progress of pharmacy generally and to the success of many of the Conferences in particular. His experience as a manufacturing pharmacist, extending over a great many years, has given him such a complete mastery over the topics which are, or at least should be, the backbone of a pharmaceutical conference, that Mr. Umney's presidency has long been looked upon as a necessary condition of its continued existence. It has fortunately coincided with the commencement of a new cycle of annual meetings, with a large, and with almost, if not quite, the most strictly pharmaceutical meeting of the long series which has now been held. Throughout all the discussions the President showed how peculiarly he was fitted for the post he occupied, his suggestive comments on the various papers as they were read frequently clearing up a difficulty or guiding other speakers into the most profitable channels.

The presidential address was none the worse for being somewhat shorter than some of its predecessors. It was crisp and pithy throughout, and will be read with profit as well as with interest. On two or three points it is impossible to avoid a brief comment. In one respect, it must be confessed, there was a feeling of disappointment. When Mr. Umney intimated that he intended to discourse on the maintenance of the principle of the purity of medicine, the announcement naturally awakened the keenest interest. It was anticipated that Mr. Umney could an' he would enlighten us all considerably on the mysteries of opt. and

super, garblings and elect., and the opportunity of hearing at first hand all about the London drug market from an expert was an enticing one. But it would seem that there is nothing to tell. Since the latter part of the last century the wholesale druggists have all been singularly honest, and, even in the bad days before, it was rather the drug miller than the druggist who did such cheating as was customary. Even this, however, is, we understand, now changed, and we quite agree that the mere dull record of honest toil would tend towards being a tedious narrative. So the President wisely and easily glided from it and proceeded, *via* a few comments on chemical remedies, towards the topic of the Pharmacopœias.

Mr. Umney's exhaustive criticism of the last British Pharmacopœia (published in this journal November 15, 1885) was one of the best pieces of pharmaceutical work he has ever done. In his presidential address he lays aside criticism, which has, indeed, effected its purpose, and refers to our existing Pharmacopœia as "an excellent type of what such a book should be." The discussions at Newcastle showed that there was still a possibility of improvement in the work—but this may be said of all things human. The President's practical advice to pharmacists is that they should do all in their power to impress upon the public that household remedies should invariably be purchased of a similar strength and quality to those medicines physicians direct to be used in compounding their prescriptions. The President says if pharmacists would thus aid in educating the public they would rid themselves of much outside competition in which weaker and inferior preparations are sold in lieu of the preparations of a higher standard vended by themselves. He also considers that pharmacists should co-operate with the Medical Council in their desire to make the British Pharmacopœia preparations legal for sale, and those of old pharmacopœias obsolete and illegal.

To a great extent we agree with this view. Chemists can, and should, make more use of the Pharmacopœia formulae than they do make of them. It is not the best policy, we think, to always cultivate the secret-medicine or speciality trade. The world is ready enough, it is true, to believe statements put before it with sufficient plausibility, but there is still a sufficient section of the public which would prefer to be dosed with medicinal compounds approved of by the representative council of the medical profession, rather than by unknown mixtures, and these people are worth catering for. They and their like will always believe—and rightly—that Pharmacopœial medicines are more to be relied on if compounded by a qualified pharmacist than if handed over the counter by a mere dealer. At the same time we do not see that it is at all the business either of the law or of the druggists to assist in pronouncing "obsolete and illegal" any old medicines which the public desire to have, but from which the Medical Council have withdrawn the stamp of their authority.

Mr. Umney seems to urge pharmacists to seek posts as public analysts partly on the ground that it would guarantee to the public the superiority of their training and their fitness for the confidence of the public. This might be worth considering if there were no other tradesmen than the selected pharmacists to be considered. But inasmuch as the appointment of these would be a gross injustice to their rivals and competitors, we cannot regret the existence of the clause in the Act of Parliament prohibiting it absolutely, and not, as Mr. Umney says, possibly.

It was right that the Pharmaceutical Conference should be informed of what had been done by negotiating with the Excise authorities in regard to the shipment of spirituous medicines duty free. If that body were a little freer from

the clouds of glory in which they have enveloped themselves, they, and perhaps another organisation, which shall be nameless in this place, might help to bring about the further advantage of getting duty-free spirit for chemical manufactures, which we are glad to observe Mr. Umney seems to regard as an indispensable supplement to the result he has so largely aided in attaining already.

Imbued with the spirit of his surroundings the President wound up his varied and interesting speech with some earnest words in commendation of scientific pharmaceutical research; but, true to his own practical way of regarding things, he aimed to show that there were unlimited openings for profit resulting from such labours. Far be it from us to damp any budding scientific ardour which may be likely to burst forth in our ranks; and we firmly believe that there are many openings in pharmacy and in chemistry for men well equipped with scientific armour. But it will not be wise to depend too much on the President's seductive words if commercial success is the object principally sought after. Even the dazzling examples quoted do not quite prove this result to have been invariably attained. One set of scientific alkali-makers have been, says the President himself, "partially dislodged and well-nigh ruined" by another set, both sets working on scientific principles; the scientific cinchona-planters of Ceylon, the Nilgiris, and Java have, he tells us, induced the cry of "Hold, enough;" and Mr. Daniel Hanbury, it is said, realised before his death 5*l.* as the profit on his great work on *Pharmacographia*. But the President does not say—and, we are sure, does not think—that pecuniary success was the exclusive or even the principal stimulus to all the work which he referred to. To great men money is one of the weakest of temptations. Knowledge is power; that is everlasting true, and those who wish to hold their own in the world's competition nowadays must have it or fail morally, if not pecuniarily. This seems to be the President's concluding advice, given earnestly and forcibly, and all who read it will be wise if they consider well his weighty words.

BRITISH TRADE IN AUGUST.

THE publication of the Board of Trade Returns for August has been looked for with rather more than the usual interest, as it was generally anticipated that the dock strike would have left a serious imprint upon the sum total of our foreign trade. The strike commenced about August 18, and considering that in 1887 the share of London alone in the total imports of the United Kingdom was 43½ per cent., and in the exports 23 per cent., it would not have been rash to assume that the August returns would show a deficit of several million pounds as compared with the corresponding month of last year. Instead of this being the case, however, the returns actually show an increase all round, our total imports from abroad having been 276,449,310*l.*, against 250,287,359*l.* in August, 1888; and of British-made goods we have exported in August, 1889, 21,326,007*l.*, and in August 1888, 21,187,759*l.*, an increase, it is true, of only ½ per cent., but still an advance. On the other hand, our exports of foreign and colonial produce have fallen from 5,566,555*l.* to 4,272,745*l.*, or over 23 per cent. The explanation of the unexpected brightness of our trade returns is simply that the Board of Trade's figures do not cover the full month which they are supposed to represent, but only something like the first three weeks of it, the last week being tacked on to the following month, because the import lists are made up by the Customs from the shipping documents before the vessel is actually unloaded, while the export

returns are compiled from papers sent in before the complete cargo has been brought on board. That the full effects of the strike will be visible in the September returns no one can doubt, and the decrease may not improbably be so large as to wipe off the entire extent of the improvement which has been gradually built up this year. The department which we may expect to see principally affected is that of foreign and colonial produce re-exported from London, for in this important branch of our trade, representing an average value of nearly 65,000,000^{l.} per annum, and including such staple articles as coffee, cotton, hides, metals, oils, rice, spices, sugar, tea, tobacco, and wool, about 60 per cent. of the business of the country is done from London, and almost all these goods can only be shipped profitably by water. Exports of British-made goods will suffer less, as for this branch Liverpool is twice as important a centre as London. Moreover, the goods made in this country for foreign shipment are mostly of an intrinsic value high enough to admit of their bearing the railway charges to open ports, and this is not the case with the bulk of raw foreign produce, which is handled here at a bare commission profit. It is, therefore, our capacity as a distributing market for foreign produce which will be injured in the first instance by the closing of the Thames, and in this particular department we have already suffered much of recent years from foreign competition and from the excessive dearness of our own shipping charges, a dearness due much less to the high rate of the wages of operatives than to waste in other directions.

THE GERMAN APOTHEKER VEREIN.

(From our German Correspondent.)

THE annual meeting of the "German Apotheker Verein," which now numbers 2,979 members, was held in Mayence, under the presidency of Dr. Brunnengräber, on the same days on which the British Pharmaceutical Conference met at Newcastle. At last year's meeting in Berlin a resolution had been passed to the effect that Würzburg should be the meeting-place for this year. Some of the Würzburg chemists, however, feeling jealous that their consent had not previously been asked, positively refused to receive the "Apotheker Verein" within the walls of their town.

It may be stated, by the way, that these annual meetings, with regard to the importance of the subjects dealt with, differ somewhat from the standard of the British Pharmaceutical Conference, as questions of internal polities of the society occupy by far the greater part of the German discussions, whilst the papers read before the meeting are considered to be of secondary importance.

Different propositions and suggestions were again drawn up for this year; in the first instance, quite in accordance with the rules, the members were asked their consent for meeting at Mayence instead of Würzburg. The second suggestion, made by Mr. Schmidt, of Beerfelden, concerned the foundation of a mutual life assurance fund for the German chemists, to which, according to the author's ideas, each chemist should pay a small annual contribution, thereby securing to his relatives a certain sum in case of his death, amounting to as many shillings as there are members at the time. This proposal was not adopted.

The Council submitted certain other proposals, one of which was to the effect that every fully qualified chemist residing in Germany and enjoying a blameless reputation should be eligible as a member of the society, no matter whether he was attached to any business or not. It is difficult to see for what purpose this proposition was made, as there already exists a similar article in the present rules. The proposal was agreed to.

The "German Apotheker Verein" consists of a number of different departments—"Bezirke," which are again subdivided into smaller branches, called "Kreise," each of

which has its own executive of honorary officers. The Council now proposed a reform, according to which the Verein shall consist only of "Bezirke," the representatives of each of these to be the sole delegates possessing votes at the annual meeting. Several "Bezirke" had previously discussed the different propositions, and partly amended them by their own suggestions, one of which was to the effect that the delegates should be indemnified for their travelling expenses. Opinions differed with regard to the source out of which the latter should be paid. The Saxon members proposed that each twenty members should contribute to send a delegate, whilst others argued that the annual meeting of the delegates should be held every year in Berlin, which was the most suitable city, being also the seat of the general office of the "Apotheker Verein," in which case they wanted the latter to bear the expenses of the delegates.

The Verein adopted the proposals of the Council—namely, that the "Kreise" shall be abolished, the Association to consist in future of "Bezirke" only, and that the voting shall rest exclusively with delegates of these "Bezirke"; also that certain expenses shall be allowed to the delegates. This arrangement, it is thought, will ensure a more national expression of opinion than heretofore.

The members for Saxony then proposed that the *Apotheker Zeitung* should only be used for abstracted reports of the latest scientific advances, and that for the publication of original work done by chemists the *Archiv der Pharmacie* should continue to be the proper organ; by this arrangement competition between the two journals would be avoided. It must be considered that the value of the *Apotheker Zeitung* was somewhat problematical, as the *Pharmaceutische Zeitung*, which had been the official organ of the society for many years, did not suffer in the least by the creation of the *Apotheker Zeitung*. The *Pharmaceutische Zeitung* is taken by most of the chemists, whether members or not, whilst the *Apotheker Zeitung*, like the general office in Berlin, has up to now been a source of considerable expense to the Association.

This year the Pharmaceutical Conference was, for the first time for several years, again supplemented by an exhibition of pharmaceutical products, for which the town hall of Mayence, beautifully situated on the banks of the Rhine, had been reserved. The exhibition was opened by an address from Apotheker Thun, of Mayence, in the presence of the Oberbürgermeister of the city. Among the exhibitors we find a good many firms who are also known and represented in England; Julius Rueff, of Frankfort-on-the-Maine, takes a prominent part amongst these. He was the first, and for a long time the only, manufacturer who imitated Rigolot's mustard-plaster in Germany. Of pharmaceutical preparations we further have C. F. Asche & Co., of Hamburg, who showed their pharmaceutical products, labelled and made up in English style. Further on we find Benno Jaffé & Darmstädter, of Martinikenfelde, where attention is drawn to the well-known lanoline preparations, including unguentum lanolini. Dr. Kade, of Berlin, has exhibited some very nice medical chests for the tropics. The well-known firms of R. H. Paulke, of Leipzig; Richard Jacobi, of Elberfeld; Dr. Chr. Brunnengräber, of Rostock; and Eugen Dietrich, of Helfenberg, are represented with all their pharmaceutical products, bearing the stamp of excellent execution.

Of the great chemical factories we have Fr. Bayer & Co., Elberfeld with phenacetin and sulphonal. Numerous articles for dressing wounds are exhibited by Paul Hartmann, of Heidenheim; M. Hellwig, of Berlin; R. H. Paulke, &c. Ed. Loeflund & Co., of Stuttgart, now transformed into a limited company, show their malt preparations. A very fine collection of instruments, especially microscopes, is exhibited by Paul Waechter, of Berlin, whilst the heavier apparatus used in pharmaceutical laboratories is represented by Aug. Zemisch, of Wiesbaden. This firm excels in good and cheap pharmaceutical machinery, as used for manufacturing pills, cutting and pulverising of drugs, &c. Altogether there are 82 exhibitors. That nearly all the branches relating to pharmacy are represented is shown by the fact that even the pharmaceutical press found its place among the exhibitors, the *Pharmaceutische Post*, of Vienna, having a nice little show, thereby acknowledging the initiative taken at the Paris Exhibition by THE CHEMIST AND DRUGGIST.

The next year's meeting will probably be held in Rostock.

Pharmaceutical Society of Ireland.

THE monthly meeting of the Council was held on September 4 at the rooms of the Society, No. 11 Harcourt Street, Dublin, at 3 P.M. Present:—The President (Mr. Charles Evans) in the chair; Messrs. Hodgson (treasurer), Beggs, Wells, Hayes, McCormack, Baxter, Merrin, and Professor Tichborne.

MR. ALLEN'S RESIGNATION.

The PRESIDENT said that ten days after the last Council meeting Mr. Hodgson and himself called on Mr. Allen, in pursuance of a request of the Council, for the purpose of asking him to reconsider his intention of withdrawing from the Council. Mr. Allen was out; but next morning he (President) received a letter from him saying that it was his fixed determination not to allow his name to go forward for re-election. On receipt of that letter he and Mr. Hodgson considered it useless to call on Mr. Allen again. He was sure they all regretted Mr. Allen's decision.

Mr. HODGSON said that personally he regretted it very much. He felt that they would sustain a serious loss on Mr. Allen's withdrawal, as he was a most useful member of the Council.

The minutes of the last meeting were then read by the Registrar, Mr. Ferrall, and afterwards signed by the President.

THE MILAN INTERNATIONAL CONGRESS.

The PRESIDENT said a letter had been received, written in French, from the secretary of the committee for organising the meeting of the seventh International Pharmaceutical Congress at Milan in September, 1890, asking whether the Council would send representatives to it. The last similar congress was held in Brussels four years ago.

It was ordered that the Registrar should write thanking the committee for the invitation, and intimating that it was rather premature to appoint representatives.

USING THE SOCIETY'S OFFICIAL ADDRESS.

A letter was read from Mr. McCreery Hill, hon. sec. of the Irish Pharmaceutical Chemists' Association, thanking the Council for the permission which it had given to that association to hold its meetings in the Council-room, and stating that it would always be the endeavour of the association to promote the interests and well-being of the Society, and to secure for its licentiates the privileges granted to them by the Irish Pharmacy Act of 1875.

The PRESIDENT said that, after the permission had been given, letters addressed to the Irish Pharmaceutical Chemists' Association had come to No. 11 Harcourt Street, in consequence of which he directed Mr. Ferrall to write to the secretary of the association on the subject.

The REGISTRAR read the letter which he had written, dated August 16, which pointed out that the leave granted to use the room for meeting did not include a permission to the association to use No. 11 Harcourt Street as their official address, and requested that that should be discontinued.

Mr. WELLS produced a card of the Irish Pharmaceutical Chemists' Association, summoning one of their meetings, and also a circular explaining their objects, on both of which the address, "11 Harcourt Street," was printed. He had spoken on the subject to Mr. Hill, who at first thought there was an intention to slight the association involved in the objection to their using the address; but he (Mr. Wells) explained to him that if it were allowed to be continued the Registrar would be inundated with letters which it would be hard to distinguish from those intended for the Council.

Professor TICHBORNE pointed out that they agreed to lend them the room to meet in, but nothing else, and

Mr. HODGSON said that to allow the association the use of the rooms as an official address for the transaction of all their business would be to do a thing which the Council had no right to do. He questioned the wisdom of granting the use of the room at all. Professor Tichborne quite agreed with that.

The PRESIDENT said it was only right to mention that since this question had been raised he had received a letter from Mr. Hill stating that the wishes of the Council respect-

ing correspondence would be complied with, and that it would no longer be sent to 11 Harcourt Street.

The Registrar was directed to write to Mr. Hill, stating that the permission given to the association only extended to the use of the room for their meetings, *once a month*, and that the summonses should contain a statement that that was by permission of the Council of the Society.

THE SCHEDULING OF CARBOLIC ACID.

A letter was received from Dr. J. W. Moore, Registrar of the King and Queen's College of Physicians, enclosing one from the Privy Council, stating that the latter body declined to sanction the scheduling of carbolic acid as a poison.

Mr. WELLS: Did we ask the college to take action?

The PRESIDENT: Yes; at a time when there had been several cases of poisoning by carbolic acid.

Mr. WELLS: Carbolic acid is constantly given out to people by sanitary officers in England. I believe there have been more cases of accidental poisoning from it than from all the other poisons put together.

Mr. HAYES: It is not from druggists that people get it, but from the sanitary authorities.

Mr. WELLS: We can only thank the college for their action and express our regret that they were not successful.

Mr. HODGSON: And that our opinion on the subject is unchanged, as it is a very dangerous poison.

The Registrar was directed to write to Dr. J. W. Moore, thanking the College of Physicians for their action in the matter, and expressing the regret of the Council that the Privy Council had not seen their way to including carbolic acid in the schedule of poisons, as the opinion of the Pharmaceutical Society remains unchanged as to the necessity for it.

RESIGNATION OF A MEMBER.

A letter was read from Mr. Pring tendering his resignation as a member of the Pharmaceutical Council.

The PRESIDENT: I am sure we all regret this. It would be a serious loss to the Society at this time to lose Mr. Pring.

Professor TICHBORNE: I propose that Mr. Pring be asked to reconsider his resignation. It has been almost invariably the custom of the Council to take this course in a case of the kind. We cannot afford to lose such a man as Mr. Pring. Although he was not a constant visitor his great experience and the interest he always took in the Society entitle him to the best consideration we can give him.

Mr. HODGSON said he fully endorsed what Professor Tichborne had said. Mr. Pring was one of the original members of the Society; and in its early history he knew the great services he was able to render to it. On the motion of Professor Tichborne, seconded by Mr. Hodgson, the following resolution was passed:—

That the Council have received the letter containing Mr. Pring's resignation with great regret, and it is the unanimous wish of the Council that he may see his way to withdraw it.

CERTIFICATES FOR THE CONJOINT EXAMINATIONS OF THE COLLEGES OF PHYSICIANS AND SURGEONS.

The following letter, dated from Paris, was received from Mr. Greenwood Pim, secretary of the Committee of Management of the College of Physicians and College of Surgeons Conjoint Examinations:—

"Dear Sir,—Your favour of the 9th was sent here. In reply I am to say that under the new regulations coming into force in October the only certificates recognised in pharmacy will be from (a) duly recognised hospitals; (b) a recognised course of demonstration; and (c) service as assistant or apprentice to an apothecary. Hence, certificates from licentiates except as above will not be accepted. I will have a copy of the regulations sent to you."

A copy of the regulations referred to in the above letter had also been received. The President read from it the following passage:—"Every candidate is required before admission to the first professional examination to produce, with respect to practical pharmacy: (1) Evidence of attendance for three months in the compounding department of a clinical hospital, which hospital shall have satisfied the committee of management that its means of instruction are sufficient, and shall return to the committee the names of its students at

the commencement of the course, together with the record of their attendances at its close; or (2) evidence of attendance on a course of practical pharmacy in a recognised medical school, the course to consist of not less than twenty demonstrations; or (3) evidence of having served a full apprenticeship of three years, or of having acted as paid assistant for not less than one year in the establishment of a licentiate apothecary or of a registered pharmaceutical chemist."

Mr. BEGGS: That is not so bad as we were given to understand.

Mr. WELLS: When I moved in the matter we were led to believe that our certificates would not be accepted.

Mr. HODGSON: Mr. Pim's letter excludes pharmaceutical chemists.

Mr. WELLS said the printed regulation admitted evidence of apprenticeship to or service with a pharmaceutical chemist; and Mr. HODGSON thought it would be desirable for the Registrar to write again to Mr. Pim, as his letter did not coincide with the printed regulations. It would be hard that the young men of that Society should be excluded from these examinations, when they could learn their business better in three months by service with a pharmaceutical chemist than they could in a hospital in twelve. On the motion of Mr. Hodgson, seconded by Mr. Wells, the Registrar was instructed to write to Mr. Pim calling his attention to the fact that his letter did not coincide with the printed regulations, the provision in favour of pharmaceutical chemists not being mentioned in the former.

Letters were read from Messrs. Clark and Gilbert enclosing certificates of practical pharmacy in lieu of documents which they had previously lodged.

The PRESIDENT: Should there not be a general rule requiring the students to send in copies of their original certificates along with the certificates themselves, so that when we had compared the one with the other we could keep the copies and send back the originals?

Mr. WELLS said it would be better to keep the original documents in the first instance, and let the students afterwards send in copies, when the originals could be returned.

Mr. HAYES did not see the use of keeping original documents.

Mr. WELLS: A resolution was passed by the Council that we should keep the original certificates.

Ultimately it was ordered that the original indenture and certificate sent by Messrs. Clark and Gilbert should be returned to them.

A letter was received from Messrs. Casey & Clay enclosing a detailed account of their charges in connection with the Pharmacy Bill of 1885, and a cheque was ordered to be forwarded to them.

THE LIBERAL PHARMACEUTICAL ASSOCIATION.

A letter was received from the "Live-and-let-live Association of Pharmaceutical Chemists," which had lately styled itself the "Liberal Pharmaceutical Association," representing that the Council had misapprehended the sense in which they had used the word "Liberal" in their title, and renewing, under their changed name, their request to be allowed the use of the Council-room for their meetings.

The PRESIDENT: Gentlemen, what is your wish as to this?

Mr. McCORMACK: I should be very much inclined to let them live outside.

Mr. HAYES: The simplest way is to say that the Council do not see their way to granting the request.

The Registrar was directed to write accordingly.

A letter from Mr. Downes on the subject of a question which he had raised as to the suspension of standing orders was read.

The Registrar was directed to reply that his request could not be granted.

OTHER BUSINESS, NEW MEMBERS, &c.

A letter was read from Mr. J. H. Henry, Cookstown, forwarding an Intermediate Education Board certificate of proficiency in certain subjects, with a request that the Council would accept it in lieu of the Preliminary examination.

Professor TICHBORNE: It will be for the Registrar to see that it includes all the subjects. With that proviso I move that the certificate be accepted. Mr. Hayes seconded the motion, which was agreed to.

A letter was received from Mr. Hill, complaining that certain licentiates whose admission as members of the Society he had seconded at the meeting of the Council preceding the last one should have been renominated at the last meeting. The President said there was a misunderstanding on Mr. Hill's part about this matter.

Mr. WELLS said the regulations provided that members of the Society might be present at meetings of the Council, but could not "take any part in its proceedings." Therefore a member of the Society could not second the nomination of a licentiate for membership.

It was ordered that Mr. Hill should be referred to the regulations on the subject.

A report was read from the Law Committee, which recommended a prosecution in a particular case, with regard to which Mr. Wells observed that they had got a number of new members, and should show them that they meant to do something for them. The report was adopted.

On the motion of Mr. Wells, seconded by the Vice-President, the following gentlemen were elected members of the Society:

Robert Jones, L.P.S.I., Cavan.
Thomas Dawson Tate, L.P.S.I., 33 Berkeley Road, Dublin.
Henry Conyngham, L.P.S.I., 11 Upper Baggot Street, Dublin.
John Isaac Bernard, L.P.S.I., Merrion House, Booterstown, Dublin.
Thomas James English, L.P.S.I., 15 Rathgar Road, Dublin.
Adam Rankin Gibson Clarke, L.P.S.I., 89 Amiens Street, Dublin.
John Edgar Connor, L.P.S.I., 79 Hill Street, Newry.
George Brown, L.P.S.I., 20 Wexford Street, Dublin.
John Nugent Harris, L.P.S.I., 3 Knox's Street, Sligo.
Bernard J. Costello, L.P.S.I., 8 Christchurch Place, Dublin.

On the motion of Mr. Beggs, seconded by Mr. McCormack, Mr. Arthur Raynor, of Love Lane West, Dublin, was elected a member of the Society.

On the motion of the President, seconded by the Vice-President, Mr. Joseph John Macaulay, of Hollywood, Belfast, was elected a member of the Society.

On the motion of Mr. Wells, seconded by Mr. Hayes, Mr. Hugh Montgomery was nominated for membership.

On the motion of Mr. Wells, seconded by Professor Tichborne, Mr. Rudolph A. C. Burns was nominated for membership.

The Council then adjourned.

Trade Notes.

MR. R. HICKS, of 5 Savage Gardens, Tower Hill, E.C., has admitted Mr. Fleetwood Stileman into partnership. The style of the firm will be "Rivers Hicks & Co."

MESSRS. POTTER & CLARKE are removing from Weston Street to new and more commodious premises at 57 Raven-Row, Artillery Lane, Bishopsgate Street, E.C., of which they have purchased the freehold. They will commence to carry on business at their new address on Saturday, September 14.

MESSRS. R. R. SEAGER AND ALEX. DOW WHITE have entered into partnership, under the style of "Seager, White & Co.," with the object of carrying on the commission business of Mr. Jas. M. Seager at 85 Gracechurch Street, E.C. The firm will also continue the representation, formerly vested in Mr. Jas. Seager, of G. Hamnett's well-known brand of oil of lemon.

MESSRS. BURROUGHS, WELLCOME & CO. are issuing convenient little lithographs of a bird's-eye view of the Paris Exhibition, which very readily conveys a general idea of the arrangement of this vast compilation of sights, and can be carried in the waistcoat-pocket. The firm will supply chemists with as many of these as they can properly distribute.

THE "Ford Shapland" prizes, of the total value of 15*l.*, for the best designs for chemists' counter-bills, are to be competed for before the end of this month. Designs in competition are to be sent in before September 30. Further particulars are given in the firm's advertisement which appeared in our last issue. The judges we understand are appointed, and will be duly announced.

Metropolitan Reports.

TENDERS for the supply of drugs and druggists' sundries, for use in the outdoor dispensaries, poorhouses, &c., of the parish of St. Marylebone, are invited by Jos. Bedford, Clerk to the Guardians, Northumberland Street, Marylebone Road, and will be received up to September 17.

MESSRS. BUTLER & CRISPE'S BUSINESS.—Mr. James Herbert Crispe, the proprietor of the drug firm of Butler & Crispe, informs us that the notice relating to his house in our issue of August 31 last is misleading, in so far as it is his intention to continue to carry on the wholesale trade of the firm, which has existed for a long time, at 14 Charterhouse Buildings, E.C., as before, though he has disposed of his retail business. The wholesale trade will be carried on under the old style, and we were, therefore, not accurate in saying that there would be a Butler & Crispe no more.

MISHAP WITH A MINERAL-WATER VAN.—A horse and heavily-laden van belonging to the Chemists' Aerated Water Supply Company, Gifford Street, Caledonian Road, N., was being driven through Queen's Road, Finsbury Park, on Monday, when a lynch-pin dropped from one of the wheels, the wheel came off, and the van toppled over, throwing boxes and bottles and syphons in all directions, and covering the roadway with waters and broken glass. Three young men were riding in the van, the driver (Howard) and his brother, and another (Taylor), whom they had picked up. Neither of the Howards was injured beyond a few scratches, but Taylor got slight concussion of the brain and a broken leg, which were treated at the Great Northern Hospital. The van-horse (a powerful one), frightened at the collapse of the van, kicked itself free from the van, breaking harness, poles, and front panels, and then rushed wildly off to the Green Lanes, where a tramcar driver stopped it without further damage occurring.

THE GREAT STRIKE.—CONVICTION OF BOTTLE-BLOWERS' APPRENTICES ON STRIKE.—At Dalston police-court on Monday afternoon, Mr. Bros had before him twenty-eight lads, all apprentices at the glass-bottle manufactory of Mr. Robert Orrock, of Wallis Road, Hackney. Two of the lads—Hounslow and Slade—were further charged with intimidating other lads. Mr. D. A. Romain, solicitor, prosecuted, and Messrs. Abbott and Ogle watched the case on behalf of the Glassblowers' Association. Mr. Romain said that, as a consequence of the recent strikes, the epidemic—if he might so term it—had spread to his client's factory. The lads Hounslow and Slade had previously been before the court charged with neglecting their work, but had not obeyed the order. They stayed away from their work, and induced others to do the same, seventeen in all following and staying out. Down to this day the intimidation had been carried on; and some of the lads now summoned would say they had been afraid to go to work. Two brothers named Adams deposed to being intimidated by both Hounslow and Slade, who said they would be "bashed" if they went to work. Mr. Wallace (manager) and Mr. Phillips (foreman to prosecutor) proved the cases, and both Hounslow and Slade alleged that they were not properly treated, having to work seventy-two hours instead of sixty. Mr. Bros said that was a different matter. They were now charged with intimidation. Mr. Romain: They are the ringleaders. The lads denied this, but Mr. Bros sent them to prison for fourteen days; and five others—Budd, King, Lawson, Tyssen, and Yates—were ordered to be imprisoned for seven days if they failed to return to their work. The remaining twenty-one defendants promised to resume work, and their cases were dismissed.

FIRE AT MESSRS. BURROUGHS, WELLCOME & CO.'S FACTORY.—A fire broke out on Thursday afternoon at the factory occupied by Messrs. Burroughs, Welcome & Co., at Wandsworth. The reports received up to the time of going to press indicate an almost complete destruction of the contents of the building, and it is said that a fireman has been killed. A large proportion of the stock and plant at Wandsworth has been lately removed to the new factory built by the firm at Dartford, but there is still a good bit of valuable machinery left, and it is feared that this will be greatly

damaged if not ruined. The fire, we are informed, originated in the drying-room on the top floor, through which the furnace chimney passed. The boiler has for some time been worked at high pressure, and the chimney, which was of iron, may have got overheated. All hands were busy at work at the time the fire was discovered, but the flames had made too much headway to be extinguished by the buckets of water and the hand-grenades which were liberally showered upon them. The smoke was very dense, and the flames soon destroyed the roof and shot up very high. The fire-engines arrived twenty minutes after the alarm was given, but too late to be of much use. The firm consider their loss fully covered by insurance, though a large stock of goods was consumed, including more than two thousand dozen of Kepler extract of malt and solution of cod-liver oil. The factory has for some months been running at its full capacity to lay in a stock of goods preparatory to moving to Dartford, where the new plant is nearly ready for use. The firm have promptly issued the following announcement:—"Burroughs, Welcome & Co. thank the Wandsworth Fire Brigade for courageous efforts in their behalf, and mourn with them the loss of their brave comrade."

COMMittal OF A CHEMIST.—Mr. Hugh Eardley Wilmot, Deputy-Judge, had before him in the City of London Court on September 7 the case of Evans, Lescher & Webb *v.* Marston. The plaintiffs, a firm of wholesale druggists, of 60 Bartholomew Close, E.C., sought by way of a judgment summons to enforce payment of a debt of 4*l.* 4*s.* 4*d.* from the defendant, Mr. Geo. Henry Marston, a chemist and druggist, of Lordship Terrace, East Dulwich. On June 22 similar proceedings were brought before Mr. Commissioner Kerr, a report appearing in THE CHEMIST AND DRUGGIST at the time. The defendant at that time attended the Court, and said that he was really unable to satisfy the judgment, inasmuch as his business at Dulwich was not remunerative, and, instead of gaining by it, he was losing money. He was not making 2*s.* a week out of it, and his takings during the previous week had not averaged half a crown a day. The plaintiffs' solicitors said that the debt was for drugs sold and delivered, and Mr. Commissioner Kerr strongly commented on the growing practice of tradesmen and others purchasing goods in the way of their business and then pleading that they were too poor to pay for them. He advised the defendant to "sell up" and try his hand at something else, observing that it was not likely that the plaintiffs could be made to suffer because of his bad business. He then made an order of committal for ten days. The defendant did not adopt the judge's advice and "sell up," and matters were now in exactly the same position as they were on the last occasion. The plaintiffs' representative now gave evidence as to the defendant's means, whose business in Dulwich he said was apparently a good one, and who had not paid anything off the debt since March. The defendant did not put in an appearance, and after hearing the evidence of the plaintiffs' representative, his Honour committed him for fourteen days.

MR. BAISS' VOTE.—The Parliamentary and County Council vote of Mr. Baiss, of Baiss Bros., the wholesale druggists, of Jewry Street, was the subject of a prolonged wrangle at the Revision Court for the City of London on Tuesday and Wednesday. The dispute arose through the fact that the recent fire on the premises of the firm had compelled Mr. Baiss to give up possession for a time. It was contended by the Liberal agent, who evidently regards Mr. Baiss as a political enemy, that this disentitled the occupier to vote, as the possession had passed into the hands of the insurance company; while the Conservative representative asserted that in a similar case, that of a public-house, the Revising Barrister had decided that the demolition of the premises by fire did not deprive the owner of a vote. One of the canvassers said he had made inquiries, and found that the premises were not utterly burnt out, and that very recently there had been a salvage sale. A considerable portion of the lower part of the building had not been touched by the fire. The Revising Barrister said that the claim would hold good if the claimant had since occupied any portion of the house. Mr. Cathie (for the Liberals) pointed out that in the case of a fire, if the house was insured, the insurance company afterwards took possession of the premises immediately notice was given. Mr. Inkersole (the Conservative agent) said that the goods on the premises were still the property

of the occupant. Mr. Cathie: That is a matter of arrangement afterwards. The insurance company are liable for the amount of the insurance. The Revising Barrister: If Mr. Baiss writes his letters on the premises, I shall hold that the claim is good, but if the insurance company have taken entire possession, then the vote will be lost. At the next sitting of the court Mr. Inkersole stated that when the question was raised it was said that the occupant had given up possession of the premises for a time, and consequently it was argued that he was disentitled to the vote, as the place was completely gutted; but inquiry had been made, and this was found not to be the case. A portion of the premises were unburnt, which portion Mr. Baiss had uninterruptedly occupied since the fire. The Revising Barrister said that of course if a claimant in these circumstances occupied any portion of the land it would entitle him to the vote. Even if he chose only to grow potatoes upon it, that would constitute an occupation. Mr. Inkersole said that the fireman, on behalf of the Insurance Company, had control over that portion of the premises which had been burnt out the very day of the fire, which took place on July 4. The claim was allowed.

Provincial Reports.

Items of news, and newspapers containing matters of interest to the trade, sent to the Editor will much oblige.

BARNSLEY.

CHEMISTRY AND FALSE PRETENCES.—Peter Ward, described as of no occupation, but who was said to have been brought up as a chemist and druggist, was charged at the West Riding Court-house on September 2 with having obtained by false pretences from William Herbert Lamb, second-hand book dealer, of Barnsley, one book, "Muspratt's Chemistry," value 3s., with intent to cheat and defraud. The prosecutor said the prisoner came to his stall on Wednesday, August 8, and said Mr. Billington wanted that "Muspratt's Chemistry," and in consequence he let him have the work, which was in thirty-six parts, and arranged that he should return the book or 3s., its value. Frederick Billington, chemist and druggist, of New Street, said he knew the prisoner, but had not on August 7 or at any other time sent him to the prosecutor for books. He was in Scarborough at the time the prisoner got these books. John Hollingworth, assistant to Mr. Billington, said on August 8 the prisoner came to the shop and offered to sell him "Muspratt's Chemistry," in thirty-six parts, for 3s. He said they were his own property, and witness bought them for 1s. 6d. Mr. Billington gave the prisoner, whom he had known for many years, a good character for honesty, but said he was addicted to drink. Defendant was bound over in the sum of 10*l.* as a probationer under the First Offenders Act, and discharged.

BATH.

CHEWING GUM.—At the last meeting of the Urban Sanitary Committee a letter was read from Mr. W. Gatehouse, public analyst, stating that the writer was anxious to bring to public notice the disastrous effects which might ensue from children eating a material to be purchased at "sweetshops" under the name of "chewing gum." This stuff, consisting largely of paraffin wax mixed with sugar, is made up in small packets variously coloured and usually labelled "for chewing only." The material, being quite indigestible, produces the gravest disturbance of the digestive organs when swallowed, and being of a semi-plastic and sticky nature, it adheres to the coats of the alimentary canal, in which it may even produce an absolute stoppage. Instances had during the past week been brought to his notice of children having been made seriously ill by swallowing this nasty material. Samples accompanied the letter. Mr. Taylor observed that it said on the label that the gum was not to be swallowed. He thought it was monstrous to think that children would only chew it. Mr. Rubie thought that children would certainly swallow it. Could it

not come under the Sale of Food and Drugs Act? The Clerk said they had no seller of the stuff. Mr. Taylor thought if it was injurious to health it came under their instructions as a committee. The Clerk said they had no case before them which they could deal with; they could instruct the inspector to take a sample of the gum, and then the matter could be brought under the notice of the justices. It was decided to adopt this course.

BIRMINGHAM.

BRITISH MEDICAL ASSOCIATION.—A project is on foot in certain local medical circles to invite the British Medical Association, which has lately concluded its meetings for the year at Leeds, to hold its next annual gathering in Birmingham in August, 1890.

CRICKET.—The married and single representatives of the Midland Counties Chemists' C.C. disposed of their differences on Wednesday, on the Langley Ground, Small Heath. The married gentlemen made a score of 104, Mr. C. S. Baynton contributing 38 towards the total. The single chemists could make no way against the bowling of Mr. H. Critchlow, who clean-bowled seven of them, and got two others caught off his deliveries. Mr. A. V. Horton scored 18, but the others only brought the total up to 44.

THE BIRMINGHAM AND DISTRICT MINERAL-WATER PROTECTION ASSOCIATION.—At the King's Heath Police Court on Friday a bottle-inspector in the employ of the Birmingham and District Mineral-water Trade Protection Association, who resides at 46 Woodbridge Road, Moseley, was charged with stealing three glass bottles, the property of George Frederick Spurrier, a boy, residing in Benacre Street. On August 31 the boy was in charge of a ginger-beer stall outside Cannon Hill Park, and defendant went to him and purchased a bottle of beer. Having consumed half of it, he picked up two bottles, marked "R. Saunders," and another with the name of "G. G. Edmonds" on it, and walked away. He subsequently offered the bottles for sale at a penny each. Mr. Stubbins said he was instructed to defend by the solicitor to the Birmingham and District Mineral-water Trade Association. The defendant was employed by the association for the express purpose of inspecting the bottles belonging to the members of the association which were in the hands of persons to whom they were not sold. By an Act of Parliament passed last year that constituted an offence. The Bench held that the evidence was not strong enough to justify a conviction, and the case would be dismissed. The prosecutor might have a remedy in a civil court.

MIDLAND COUNTIES CHEMISTS' ASSOCIATION.—A meeting of the council of the Midland Counties Chemists' Association was held on Monday afternoon at the Mason College, under the presidency of Mr. W. F. Wyley, J.P. (president of the association). There was a good attendance of members, though several were absent at the Pharmaceutical Conference. The question of the education of the younger members of the association was discussed, and it was decided that an announcement should be made that the association was prepared to continue the classes if a sufficient number of students sent in their names. This was considered an especial condition for their continuance. A sub-committee was appointed to arrange for teachers and the engagement of a suitable place for the delivery of the lectures. It was proposed by the Chairman, and agreed to, that the Pharmaceutical Society should be asked for a grant of 25*l.* to purchase books; and in the event of the appeal being successful, a sub-committee will be appointed to further the matter. The date of the annual ball was fixed for January 17, at the Edgbaston Assembly Room. It was also decided that the coming session should be inaugurated by a conversazione, at which the President would address the members of the association. Ladies will be invited to the gathering. The date of this event has not yet been fixed, but it will be in the early part of October. The conversazione will be held at one of the principal hotels in the city.

THE PROSECUTION OF UNQUALIFIED MEDICAL PRACTITIONERS.—At the Birmingham Police Court on September 6, before Mr. A. Hill (deputy stipendiary), eighteen summonses were heard against persons who, it was alleged, falsely held

themselves out as legally-qualified practitioners in medicine and surgery. The prosecutions were conducted by Dr. Showell Rogers (Messrs. Johnson & Co.), on behalf of the Medical Defence Union, whose secretary (Dr. Leslie Phillips), with many other local medical men, were in court during the hearing of the cases. The first cases gone into were those against Charles Frederick Groom, of 44 Great Charles Street, who was charged, on the information of Detective Blizzard, that on July 26 he falsely took and used the name of a member of the Royal College of Surgeons, and thereby implied that he was then registered under the Medical Act, and recognised by letter as a surgeon. The second information was that on the same day he unlawfully pretended to be a physician, and the third, that on the same day he unlawfully took the name or title of Doctor of Medicine. Three similar informations were also laid by Detective Thomas for offences of a similar character. Mr. Vachell (instructed by Messrs. Ansell & Ashford) appeared for the defendant.

Dr. Rogers, in opening the case, said that it would be noticed that none of the charges were for practising as a surgeon or doctor without being properly qualified, because, curiously, that was not an offence under the Medical Act 1858. They could only prosecute for wrongly taking the title of a properly qualified practitioner. The prosecution against these men was undertaken because they were what was known in the profession as notorious "venereal quacks." The difficulty experienced in getting at these "quacks" was that they could not get actual patients to come forward and give evidence of the treatment they had received. Ten visits had been paid to these men, and those who paid the visits were free from disease. Proceeding to speak of a pamphlet issued by Groom, entitled "The Pathway of Safety," Dr. Rogers said it was examined at a meeting of the Royal College of Surgeons, and was found to be of so grossly indecent a character that a resolution was passed expelling him from that body. Having had his qualification taken away he had no right to assume the authority he did. Further evidence that he had acted as a member of that body when struck off their roll was to be found on his door-plate, which read, "Mr. C. F. Groom, surgeon." He could prove that Mr. Groom had struck out the word "surgeon" in the pamphlet of 1888, and had inserted the word "doctor," just to give himself a seeming qualification. He also struck out the words "legally qualified," thereby showing that he knew himself that he was committing an offence in having the words inserted. Speaking of the medicine used by these men, he had a medical man in court who would show that the bottles of medicine on the table were worth less than $\frac{3}{4}$ d. instead of 5s. 6d. each. Baron Pollock had laid down that even if a properly qualified practitioner took the title of "doctor" without being legally entitled to do so, he infringed the law; it was evident, therefore, that an unqualified man was a much greater sinner if he took unto himself such a title.

Detective Walter Blizzard deposed that on July 26 he visited defendant's establishment in Great Charles Street. He asked for "the doctor," and defendant came in. Defendant said, "What is the matter?" and witness replied, "I don't know, I'm sure, but I feel very bad." Witness was perfectly healthy at the time. (Laughter.) Defendant said, "I suppose you know what you will have to pay?" and witness said, "No, not exactly." Defendant said, "You will have to pay a pound down for consultation fee, and pay for the medicine afterwards." Witness then gave defendant a sovereign, and defendant asked his symptoms. Witness then described his "symptoms," taking them from one of defendant's pamphlets. (Laughter.) Defendant then told him that he was in a very bad state, and gave him a bottle of medicine and a box of pills, for which witness paid 10s. Witness was to go again in a week. Defendant asked witness if he had read any of his (defendant's) works, and gave him a pamphlet, which he was to read when he was quiet. The doorplate bore the name, "Mr. C. F. Groom, surgeon." Over another door were the words, "J. and W. Hunter."

Detective Thomas gave similar evidence.

Edward Trimmer, secretary of the Royal College of Surgeons, produced the medical registers containing the name of Dr. Groom, and the minute-book of the Council containing the resolution already read. On October 11 he communicated this resolution to the defendant, requiring him to return his diploma, as required by the by-laws. The diploma had not been returned.

Addressing the Bench on behalf of Groom Mr. Vachell said that a person had a perfect right to practise as a surgeon without being registered. The offence charged was that of wilfully and falsely assuming to be a surgeon or physician, and so implying a title to be registered. Mr. Groom might have qualifications other than that under which he was registered in 1887. He did not deny that Mr. Groom had the word "surgeon" on his door; all that he could say was that they could not tell at what date that was put up. The register showed that his name was on the medical register a few days before the new one came out. Then came the prosecution. Had he put it up afterwards he should have had nothing to say. But the man had the claim to call himself a member of the Royal College up to the end of July. The omission to take it down was for a few days. He ought to have taken it down; but it was not a deliberate attempt to falsify. At any rate it was put up at a time when he had a right to have it up. Again, how was Mr. Groom to know that he had been struck off the rolls? The college met with closed doors, and it could not be proved that any communication to the effect that he was no longer a member of that body had reached him.

Dr. Rogers, in replying to the legal arguments of Mr. Vachell, contended that no person was now entitled to represent himself as a legally qualified practitioner unless he was registered. Persons practising previous to 1815 were originally exempt, but it would scarcely be contended that the defendant was 94 years old, which he would be even if he commenced practice at the age of 20 before 1815.

The next case heard was that of John Marston, of 44 Great Charles Street, also carrying on business at 21 to 26 Bradford Street as a carriage-builder. The defendant was summoned, on five informations made by Detectives Blizzard and Thomas, for wilfully and unlawfully taking the name of "Dr. Hunter," thereby implying that he was registered under the Medical Act of 1858, and that he was then recognised by the law as a physician or a licentiate in medicine and practitioner in medicine; also that he falsely pretended to be a doctor of medicine.

Detective-sergeant Thomas said he went to 44 Great Charles Street, and saw Mr. Marston, who said, "You come for advice? Our fee is 1*l.* for consultation, and you pay for the medicine." Witness said, "I presume you are Dr. Hunter?" and he replied, "You should presume nothing. You should pay the fee, and leave the case. I am Dr. Hunter." He then felt witness's pulse, and said, "You are very ill indeed. You had better have one of our 5*l.* cases of medicine." Witness, however, said he would like to have a 1*l.* lot first, and paid him for it. Defendant then gave him a book issued by the firm, and said they would "build him up in time." Dr. Rogers read an extract from the book, which stated that "many of our patients have lost both health and money by consulting 'quacks,' and we would say

"Put a whip in every hand,
And whip the rascals through the land."

(Laughter.) Defendant afterwards told him that his was a very serious case, although at the time witness was perfectly healthy.

Detective Blizzard gave evidence of a similar character.

Mr. Vachell argued for the defence that it had been laid down that a person might be qualified though not registered, and there had been no proof that Marston was not qualified, although he was not registered. As a matter of fact, Marston did not arrogate to himself a medical title, but he simply succeeded to the business from his father. The business had been carried on for about forty years, and although he had before been summoned for various small offences, such as posting objectionable bills, &c., nothing had been said to him as to the illegality of his practice. Mr. Marston possessed a qualification. His was an American diploma, granted by the University of Philadelphia in August, 1876.

Dr. Rogers said he should object to the diploma being put in unless it could be proved that it was granted only after examination. It was laid down by law that unless this was done a diploma could not be put in as evidence. The document might have been got up only yesterday.

The document was allowed to be put in for what it was worth.

Mr. Vachell went on to argue that if Marston believed

that the possession of the American diploma justified him in calling himself a doctor the defendant could not be convicted of "wilfully and falsely" using the title. Further, he contended that it lay upon the prosecution to prove that the defendant had not registered himself between January 1, when the register was issued, and the date of the alleged offence. The register ought to have been produced to show that the defendant's name was not on it.

Mr. Carter: And all the branch registers too.

Dr. Rogers replied to Mr. Vachell's legal arguments, and pointed out that if his view of the duties of the prosecution were accepted they would have to bring persons from about twenty universities and other bodies to prove that the defendant was not qualified.

Mr. Hill, after considering the case in private for some time with Mr. Carter, the magistrates' clerk, announced that he had resolved to convict in two cases against each of the defendants; namely, in those with regard to falsely assuming the title of doctor.

Dr. Rogers pressed for a decision on the other summonses, but Mr. Hill replied that he simply dismissed the cases. He should reserve his decision as to the penalty until after the other summonses had been disposed of.

Mr. Vachell applied for a case on each conviction, and this was granted.

Four summonses, granted on the information of Detectives Blizzard and Thomas, were then heard against Jesse Key, practising as Dr. Curtis & Co., at 97 Hill Street. Mr. Dale (instructed by Sharp, Wilkinson & Co.) appeared for the defendant.

Detective Blizzard said that on August 22 he visited defendant's premises, situated at 97 Hill Street. On a board outside was the word "dispensary," and a sign was displayed bearing the name "Curtis & Co." When witness went in he said, "Can I see Dr. Curtis?" Key said, "Yes; I am Dr. Curtis;" and then he added, "My word, you do look ill. It's sad to see a young man like you so very bad." (Laughter.) Witness told him that he was a post-office sorter, and no doubt the confinement had something to do with it. Defendant said, "Yes; you have indigestion and a complication of disorders." (Laughter.) Defendant mixed up some medicine in a bottle, for which he charged 5s. Before witness went away defendant made him take a dose of medicine in the shop, which made him feel very ill, and he had to take another dose of medicine next day to take away the effects of it. (Laughter.) Witness took from the table in defendant's presence a bill bearing the words, "Dr. Curtis & Co., from the London and Paris Hospitals. Delay not; trifle not; but apply at once to Dr. Curtis & Co."

Dr. Rogers put in the "Medical Register," in which the name of Mr. Key did not appear. Mr. Dale submitted that there was no case. He did so on the ground that there was no proof that the defendant was not registered on the date in question.

Mr. Hill: That has been brought out in the other case.

Mr. Dale then took several technical objections to the summonses. He pointed out that the defendant was charged with having "taken or used," and in other parts of the summonses the word "or" was used. It was not legal to charge a man disjunctively in that way. He must be charged with one thing or the other definitely. Then he would point out that defendant did not practise as a doctor. His charge was for medicine, not for attendance; and his advertisements were of his medicines, not of himself.

Detective-sergeant Thomas then gave evidence of a similar visit to the defendant, and Mr. Dale raised the same legal objections in defence.

Mr. Hill said that he was prepared to convict on two of the summonses referring to the assumption of the "doctor."

After some argument, Dr. Rogers agreed to let all the other summonses be considered as dismissed, but remarked that if he got costs only on two summonses against each defendant the expenses of the prosecution would be very heavy.

On the application of Mr. Dale, Mr. Hill granted a case on each conviction on the legal points raised.

After some argument as to penalties, in the course of which Dr. Rogers stated that the defendant Key was fined in December, 1876, in that court, for illegally practising as Dr. Key, M.R.C.P.L.A.,

Mr. Hill said that the full penalty would be inflicted for

each case—namely, 20*l.* and costs—making 40*l.* and costs against each defendant.

The penalties against Marston and Groom, amounting, with costs, to 43*l.* 3*s.* each, were paid by their solicitor. Key asked for a week's grace, and this was granted.

BRADFORD.

A FIRE broke out on the afternoon of September 6 in a six-storey warehouse occupied by Messrs. Humphries & Co., manufacturing chemists, and Mr. John Henry Willey, wool merchant, in Eastbrook Lane, Bradford, owing to the upsetting of some chemical liquid. The building was completely gutted, damage to the extent of between 10,000*l.* and 12,000*l.* being done.

BRISTOL.

EXPLOSION IN A LABORATORY.—On September 11, Mr. Williams, chemist, of Cheltenham Road, Bristol, struck a match in his laboratory to ascertain where there was an escape of gas, when there was a violent explosion, wrecking a portion of the laboratory, blowing out the plate-glass windows into the street, setting some articles in the shop on fire, and seriously injuring Mr. Williams and one of his assistants, Mr. Baker, who lies at the infirmary. The flames were soon extinguished.

COLCHESTER.

OPPOSITION TO A CHEMIST'S SPIRIT LICENCE.—At the Latchingdon licensing session on September 6, Mr. H. W. Jones, of Colchester, applied on behalf of Mr. S. Steele, chemist, of Southminster and Burnham, for a licence to sell wines and spirits in bottles, and beer in casks and bottles, by retail at his shop at Burnham. There was an organised opposition to this application. Mr. Moseley, of Ipswich, opposed on behalf of the Colchester Brewery Company, the owners, and Mr. D. S. Hawkins, the tenant of the Ship Inn; Mr. W. Tanner, of Chelmsford, on behalf of Messrs. Pattisson & Co., Messrs. Wells & Perry, and of Mr. Andrew Durrant, the owners of houses in Burnham and Southminster; and Mr. Hayward, of London, on behalf of the inhabitants of Burnham generally, and the Rev. J. L. Govett as a ratepayer. The court was crowded with persons interested in the application. Mr. Jones, in opening his case, said he had never in his experience met with so much opposition. He thought it would not have been so strong, or the opposition petition so numerously signed, had the signatories been aware of the nature of the licences his client was applying for. He believed many of those who signed the petition were under the impression that Mr. Steele was applying for a licence for a fresh public-house, but that was not so. He only asked for a licence to sell wines and spirits in bottles, and beer in casks and bottles, by retail, to be consumed off the premises.

His client already held the Excise wholesale spirit licence. Mr. Steele's predecessor had, up to last year, held a licence to sell beer, and it was only through illness that he neglected to renew it; so that he was not really asking the Bench to increase the number of licences. Mr. Jones submitted that such a licence was really required, as there was no other of the same nature in the town. There were a great many visitors to Burnham through the opening of the new railway, and yachts were constantly coming up to Burnham, and a great many people objected to going into a public-house for a bottle of spirits or wine. They preferred going into a private shop, and it seemed hard that they should not be able to do so in a place like Burnham, with a population of between 2,000 and 3,000. Mr. Steele was a man of excellent character, but a memorial had been signed by the principal inhabitants, including the Vicar, who opposed this application. He respectfully submitted that under the Act they had no discretion as to the licences for wines and spirits except on certain grounds, which did not exist in this case. Mr. Steele proved the service of the necessary notices. Cross-examined by Mr. Moseley, Mr. Steele said: The Ship Inn was next door to his shop, with a roadway between. The White Hart Hotel was about 200 and the Star Inn about 400 yards from his house, and there were other licensed houses near. He had never been asked personally for a bottle of spirits while serving a box of pills. Mr. Jones: I thought my friend

would bring in about the pills. He is fond of doctoring himself. (Laughter.) Mr. Tanner and Mr. Hayward also cross-examined Mr. Steele and his manager (Mr. Watt), who proved that he had been frequently asked by visitors for liquors and bottled beer. He (the manager) was a teetotaller himself. Mr. Moseley addressed the Bench in opposition to the application, as also did Mr. Tanner and Mr. Hayward. Mr. Jones said that if the shopkeepers had cut into the publicans' trade, the publicans had retaliated, and now sold tea and other articles. The Chairman said that the licence to retail wine and spirits would be granted, but not the beer licence.

HULL.

A SAD FINISH.—After "Sequah's" final oration at Hull on Wednesday of last week a number of youths drew him and his car at a rattling pace through the streets of the town. One of them—a railway employé named James Martin—fell, and the car passed over him. He was taken to the hospital, but his injuries were so severe that he died the next morning.

LIVERPOOL.

AN adjourned meeting of the Bleach Association was held at Liverpool on September 4, and the attempt to arrive at a salt basis failed. One West-country maker, who all along would not join, again definitely refused to do so, and so the meeting passed a resolution expressing its opinion that the scheme was impracticable. The failure to bring bleach within the bonds of association may turn out to be a very unfortunate thing for the chemical trade. To the Leblanc manufacturers bleach was the chief source of profit left, and the prospect of the article falling to a low figure, as it will, beyond doubt, do if everybody is left with a free hand, is not encouraging. Bleach is the mainstay of the Tyne chemical trade.

MANCHESTER.

THE MANCHESTER PHARMACEUTICAL SOCIETY begins the session 1889-90 on the second Wednesday in October. The meetings will again be held in the Victoria Hotel—a building which has, by the circumstances attending its erection and history, earned for itself the title of "The Manchester Corporation's Folly." Mr. W. Brown is nominally the president of the society, but for some time he has not taken an active part in its deliberations. At the first meeting the business will consist of the reading of the committee's report, the election of officers, &c.

A CORONER ON POISON BOTTLES.—At the city coroner's court on Monday, at the inquest on the child Margaret Ann Hardman, whose death through swallowing carbolic acid is reported elsewhere in this issue, Mr. S. Smelt, the deputy-coroner, in the course of some remarks to the jury, said that it would be a great safeguard if chemists could be compelled to put poisons in bottles of peculiar colour or shape, as was done at many hospitals throughout the country. A peculiarity of colour and shape would preclude the possibility of making any mistake in the handling of the bottles either by night or day.

HE KNOWS NOW.—*On dit* that a short time ago the agent of one of the insurance companies visited a well-known drug mill in the city, and, in the course of his inspection, inquired whether there was any benzene kept in the place. "Oh, no!" was the prompt reply, "we do not keep inflammables here." Later on in the tour of inspection the agent was shown a portion of the premises in which, he was informed, benzoated lard was kept. "But," said he, "you told me you did not keep benzene." And he looked severe and paused for a reply. Being a polite man, the deputy-manager of the mill, who had been acting as cicerone, did not burst into laughter, as he might have been excused for doing. He simply smiled a bland, pitying smile, and set himself to make good the defect in the insurance agent's pharmaceutical education by explaining the difference between benzene and benzoated lard.

MR. BENJAMIN ROBINSON, manufacturing chemist and brewer of British wines, Pendleton, has been invited to

permit himself to be nominated for the mayoralty of the borough of Salford for the ensuing year. In the event of his acceptance of the nomination he will probably be unanimously elected, as he is very popular with his colleagues in the Town Council. For four years he has been one of the representatives of Seedley Ward on the Council, and he has done good work not only at the Council meetings, but in committee. For some time he has been chairman of Pendleton's Local Parliament, the Pendleton General Purposes Committee, and he is also a member of the General, Watch, Gas, and Health Committees. He has been for some time a member of the Salford Board of Guardians, and at present occupies the position of chairman of the Board.

NOTTINGHAM.

THEFT FROM A CHEMIST'S SHOP.—On September 6 James Calladine, of 1 John's Cottages, John Street, New Basford, and William Shaw, of 15 Holden Square, St. Ann's Well Road (boys), were charged on remand with stealing on August 31 last a bottle of pomade, value 1s., from the shop of Mr. R. Fitzhugh, of Long Row. Calladine was discharged with a caution, but Shaw was ordered to receive eight strokes with a birch rod.

PORTRUSH.

ADULTERATED ARROWROOT.—At the Police Court, on Monday, William Henry Johns, grocer, of 89 Church Road, was summoned for having supplied Inspector Monkcom with adulterated arrowroot. Mr. J. Feltham, on behalf of the urban sanitary authorities, prosecuted. Mr. Cousins, the magistrates' clerk, asked Mr. Feltham what his definition of arrowroot was, and as the prosecuting solicitor felt disinclined to speak without the Pharmacopœia a copy of that work was sent for. On its arrival Mr. Feltham applied to withdraw the summons, on the ground that defendant had already been fined 40s. on the same day for selling coffee adulterated with 50 per cent. of chicory. Quite incidentally he remarked that it was very difficult to prove what arrowroot really was, as the preparations differed so much. The magistrates thought the magnanimity superfluous, but allowed the withdrawal.

IRELAND.

HOSPITAL SATURDAY at Belfast this year realised 281*l.*, an increase of 60*l.* on last year.

MR. JOHN THOMPSON, late of Messrs. Bell & Co., apothecaries, Belfast, is about to open an establishment at Great Edward Street.

A WELL-STOCKED drug store has just been opened at Cromac Street, Belfast, by Mr. Archeron, late of Messrs. Shaw & Jameson.

COCHRANE & COCHRANE, aerated-water manufacturers, Cromac Street, Be fast, notify that they have changed their title to Bayliss & Cochran.

MARSHALL'S PHARMACY, Rathmines, Dublin, has been taken over by Mr. William Hayes, pharmaceutical chemist, Grafton Street.

MR. ANDERSON, chemist and druggist, Parliament Street, Dublin, has this week opened a branch establishment at Portobello Bridge.

MR. E. McCREERY S. HILL, M.P.S.I., hon secretary, Irish Pharmaceutical Chemists' Association, has just taken the degree of L.M., Coombe Hospital, Dublin.

MESSRS. HOYLE & CO., chemists, Dublin, have adopted the novel plan of supplying to purchasers of five shillings and upwards a discount of 10 per cent. paid in tramway tickets.

THE committee of management of the Ballyfarnon dispensary district notify that on Monday, 23rd inst., they will elect a dispensary officer at a salary of 110*l.* per annum; personal attendance indispensable.

DR. DUNLOP, who for the past thirty-two years has filled the position of dispensary officer of the Hollywood district,

has tendered his resignation. The vacancy will be announced in a few days.

ULSTER chemists and druggists view with considerable disfavour the practice pursued by Poor Law guardians in general of inviting tenders from the trade, and subsequently rejecting them in favour of the existing contractors, although the quotations of the latter are higher than the competitors.

WILLIAM HOLDEN, a Castlederg blacksmith, purchased last week a quantity of arsenic from Mr. Alex. Mullens' drug store and proceeded to his home, where he endeavoured to eat it, but was prevented from doing so by his wife, who promptly called in a policeman and had her suicidal husband arrested.

ADMISSION OF WOMEN TO MEDICAL CLASSES.—The authorities of the Queen's College, Belfast, have for some time past had before them applications from a number of young ladies who wished to enter medical classes, with a view to studying medicine, and the medical faculty of the college have now resolved to accede to that request.

DEFUNCT JOINT-STOCK COMPANIES.—Official notification has been given that the following joint-stock companies have been struck off the register, and are therefore dissolved:—The Belfast Glass Bottle Company, Goulding's Phosphate Company, and the Irish Iodine and Marine Salts Company (Limited).

DUBLIN RAILWAY RATES ASSOCIATION.—At a meeting of this body held last week at Dublin, Mr. James Shanks, T.C., manufacturing chemist, in the chair, it was stated that the association had secured the co-operation of some of the leading objectors throughout Ireland, and by this means they would be enabled to issue at once an important circular having reference to the formation of an Irish conference on railway and canal rates. The greater part of the city and provincial chemists and druggists are already members of this organisation.

BURNING OF A DRUG ESTABLISHMENT.—At Enniskillen last week the premises of Mr. W. T. Morrison, druggist and ironmonger, Church Street, were considerably damaged by a fire which broke out in an adjacent store, occupied by Mr. Meyers, an oil merchant and general shopkeeper. The flames speedily spread to Mr. Morrison's concern, in which was stored a large quantity of petroleum, powder, and chemicals. Owing, however, to the exertions of over four hundred soldiers, the conflagration was checked from extending to the bonded stores. Had the latter not been accomplished the entire town would shortly have been in a blaze.

THE following notice of motion was last week received by the Public Health Committee, Dublin:—"That this committee, having the administration of the Adulteration of Food and Drugs Act, considers that no distinction should be made in the punishment of offenders under these Acts because they may happen to own large establishments. Such distinctions are likely to have a most injurious effect on our inspectors, by deterring them from inspecting the goods offered for sale in such places, and will cause the poorer offenders to consider that these Acts are not impartially administered, and that a copy of this resolution be sent to each of the divisional magistrates."

IRISH DRUG CONTRACTS.

THE Board of Guardians of the Armagh Union invite tenders for a three years' supply of drugs, medicines, and medical appliances for the workhouse and eight neighbouring dispensaries, the appointment to be decided on the 17th inst.; the usual sureties and a bond of 500*l.* to be furnished by the successful candidate. As the yearly turnover in this district is, perhaps, the largest in the country, the competition among the wholesale houses is extremely keen, several Belfast chemists being already in the field.

The guardians of the Balrothery Union will on Monday, 23rd inst., appoint a contractor for the supply of drugs and medicines to the workhouse and six dispensaries attached.

Tenders are invited by the committee of management of the Callan Union for a twelve months' contract for drugs

and medicines to the workhouse and four neighbouring dispensaries; the appointment to be made known on Monday, 16th inst.

The clerk of the Waterford Union notifies to wholesale druggists that the guardians will meet on Wednesday, 18th inst., to appoint a contractor for the supply of drugs and pharmaceutical requisites.

A contractor will be appointed on Wednesday, 18th inst. for the supply of drugs, medicines, &c., to the Limerick Workhouse and thirteen dispensaries attached.

The Enniskillen Poor Law Board invite samples of drugs and medicines for the workhouse and district dispensaries, the contractor to be appointed on Tuesday, 24th September.

The triennial appointment of a contractor for the supply of drugs, medicines, and medical appliances to the Parsons-town Union and seven dispensaries attached will be decided at the next meeting of the guardians. It is stated that the present wholesale suppliers will be reappointed for another three years.

The guardians of the Kells Union will on Saturday, 21st inst., consider tenders for a year's supply of drugs and medicines for the County Meath district, the usual stipulations to be observed by the contractor.

Poisonings.—Mary Brodley, an unmarried Nottingham woman, aged 37, committed suicide on September 6 by swallowing a large quantity of carbolic acid which was lying about the house, being used for disinfecting purposes. She had been subject to melancholia.—At Newcastle-on-Tyne one person has died and several have been rendered seriously ill by eating tainted meat.—A marine is under close arrest on board the *Camperdown* at Portsmouth, charged with having administered oxalic acid in a cup of coffee to an officer of his corps, Major Coffin, commanding the marines on H.M.S. *Collingwood*.—At Portsmouth a staymaker, Annie Stillwood, after a drinking bout and a quarrel with her "young man," attempted to commit suicide by swallowing a quantity of sulphate of copper; but the dose was not large enough, and she recovered under medical treatment.—Sergeant-Major Brent, of the Northumberland Artillery, was found dead in his bedroom at Berwick last Friday, poisoned by cyanide of potassium, of which the deceased took some by mistake for whisky.—On the following day Jennie Whittle, professionally known as Jennie Leslie, an actress, endeavoured to commit suicide by taking a quantity of laudanum at her lodgings in Lambeth; and an elderly man was picked up in the Borough who had taken threepennyworth of "precipitate powder," because he was tired of his life.—A baby at Kilnhurst got hold of a bottle of ammonia, left about on the table by its little sister, drank of its contents, and was killed.—Laudanum was resorted to by Joseph Woollans, aged 76, of Smalley, Notts, who, having been "strange in his manner" lately, killed himself by swallowing sixpennyworth of it on September 6.—An inquiry into the circumstances attending the death of Margaret Cuthbertson (32), a cook at Wolsingham Rectory, resulted, on September 4, in a verdict of "Poisoning by misadventure." The woman had soaked lucifer matches in water, and swallowed the liquid, death being caused by phosphorus poisoning.—On September 9 a little girl of three, Beatrice Green, went into her grandmother's house at Cheltenham, and, reaching a tube from the mantelpiece in the front room, drank some of the contents—nitric acid, mixed with mercury. Death ensued about two hours afterwards.—On Monday also a man named Edwin Hough, manufacturing jeweller, of 12 Mount Street, Nottingham, was found dead in his house, and on the table near him a cup containing cyanide of potassium, evidently taken from a store of it which he kept for cleaning purposes in the course of his trade.—At Bolton police court, on September 10, a labourer named Sam Brooks, of Crook Street, Bolton, was charged with attempting to commit suicide by drinking carbolic acid, a bottle of which he took out of the storeroom of Mr. J. Baxendale's tinplate works, where he was employed. A quarrel with his sweetheart had led Brooks to commit the rash act, but speedy medical attendance brought him round, and he lived to shed copious tears in the police court, and to be discharged on a promise not to do it again.

Gazette.**PARTNERSHIPS DISSOLVED.**

Barrett & Moore, Littleport, general medical practitioners.
Drs. Toone-Smith & Alexander Mitchell, Marlborough Mansions, Victoria Street, Westminster, and at Wandsworth, physicians, surgeons, and general medical practitioners.

Steele & Mason, Gomersal and Birstal, surgeons.

Whiteley, G., & Whiteley, W., under the style of George Whiteley & Co., Todmorden, and of Hassall & Co., at Todmorden and Manchester, wine and spirit merchants.

THE BANKRUPTCY ACT, 1883.**RECEIVING ORDERS.**

Edwards, William, Huddersfield, mineral-water manufacturer.
Simpson, Harry Ernest, Richmond Road, Hackney, and City Road, E.C., physician and surgeon, carrying on business at City Road with W. G. McFee as Simpson & McFee.

FIRST MEETINGS AND PUBLIC EXAMINATIONS.

Alewold, Edwin, Swansea, chemist and druggist—first meeting, Sept. 13, Bankruptcy Buildings, Portugal Street, Lincoln's Inn Fields; public examination, October 31, Town Hall, Swansea.

Edwards, William, Huddersfield, mineral-water manufacturer—Sept. 16, Messrs. Haigh & Son, New Street, Huddersfield; Oct. 14, County Court, Huddersfield.

Jewell, Charles Coleman, Old Burlington Street, W., physician—Sept. 24, 33 Carey Street, Lincoln's Inn Fields; Oct. 17, 34 Lincoln's Inn Fields.

ADJUDICATIONS.

Edwards, William, Huddersfield, mineral-water manufacturer.

McDonagh, James Samuel, Clement's Inn, Strand, and Forest Road, Chingford, late of Colosseum Terrace, Regent's Park, doctor of medicine and surgeon, and commission agent.

Preston, Alfred Prince, late of Middlesbrough and Maske-by-the-Sea, chemist and druggist.

NOTICES OF DIVIDENDS.

Abbott, William Hobson, Annesley Woodhouse, Newstead Kirkby, and Kirkby Folly, surgeon—final div. of £s. 11 $\frac{1}{2}$ d., Sept. 18, Mr. H. Bradfield's, 16 Fletcher Gate, Nottingham.

Hogg, William, Sheffield and Calver, dentist—first and final div. of £s. 9 $\frac{1}{2}$ d., Sept. 16, Official Receiver's offices, Sheffield.

Sadler, Jesse Johnson, Walsden, valetta, ammonia, and chemical manufacturer—first and final div. of £s. 7 $\frac{1}{2}$ d., Sept. 15, Temple Buildings, Todmorden.

EXTRACT FROM THE REGISTER OF DEEDS OF ARRANGEMENT.

Graham, John, Prebend Row, Darlington, chemist and druggist and shipping agent. Trustee: John T. Hall, chartered accountant, Darlington. Date, September 2; filed, September 9; unsecured liabilities, 815*l.* 9s. 6d.; estimated net assets, 373*l.* 4s. 4d.; creditors fully secured, 3,054*l.* 10s.

	£ s. d.
Backhouse, J., & Co., Darlington	680 0 0
Cradock, Joseph, & Co., Stockton-on-Tees	11 0 0
Harvey & Davey, Newcastle-on-Tyne	24 0 0
Hope Brothers & Co., Liverpool	21 0 0
York City & County Bank, Darlington	41 0 0

BANKRUPTCY REPORT.*Re JAMES MORRISON SEAGER.*

THE public examination of this bankrupt was held on September 3 last, at the London Bankruptcy Court. Mr. Van Sandau appeared for the trustee, and Mr. Howell for the Official Receiver, but Mr. Seager did not put in an appearance, and Mr. Registrar Brougham, in the absence of the bankrupt, ordered an adjournment *sine die*.

MARRIAGE.

[Notices of Marriages and Deaths are inserted free if sent with proper authentication.]

MILL—WHITE.—On September 5, at Christ Church, Plymouth, by the Rev. Bonsell, William Mill, Tavistock Bank, Launceston, to Annie, eldest daughter of the late Thomas White, chemist, Launceston, and niece of W. Woods, chemist, 7 Argyle Terrace, Plymouth.

DEATHS.

CLAPTON.—On September 4, at Coventry, Mr. John Clapton, chemist and druggist, formerly in business at Gosford Street, Coventry, afterwards at Sidbury, Worcester, but of late years retired from business. Aged 42.

COLLIS.—On September 4, Mr. Samuel Collis, chemist and druggist, Bath, aged 71. The late Mr. Collis was born at Coleshill, Warwickshire, on August 5, 1818, and was well known in many parts of the country, as for a great many years he travelled all over England and Wales for the now extinct firm of Thomas Marsden & Sons, wholesale druggists, Queen Street, Cheapside, and subsequently for Messrs. Harker, Stagg & Morgan. He also represented Messrs. Peck Brothers & Co., of Eastcheap, for tea and spicess; and Messrs. R. Sumner & Co., wholesale druggists, of Liverpool. Afterwards he was in business as a chemist and druggist and transfer agent at Cheadle in Staffordshire, but for the past seven years has been settled at Bath. He was struck with paralysis on January 7 last, and has never recovered.

GRISTWOOD.—On September 4, in London, after two years illness, Mr. S. E. Gristwood, for many years the respected representative of F. Newbery & Sons. The late Mr. Gristwood was the son of a former chief warehouseman in Messrs. Newbery's firm, who died in March, 1885, after more than forty years' service with them. He worked his way up in the establishment, and on the death of Mr. C. Gurry, a name now remembered but by few London chemists, he "took up the reins," and for many years was a familiar figure in the London districts. Unfortunately, he began to be incapacitated for duty near upon three years since, and, although the nature of his malady was at first obscure, it soon became evident that it could have but one termination. He died of general paralysis at a comparatively early age, leaving a widow and family.

KERNOT.—On September 5, at Bishnauth, First Avenue, West Brighton, Charles Noyce Kernot, of Calcutta, M.D., M.R.C.S.E., L.M., &c., aged 49. Dr. Kernot, whose early death will surprise many who knew him in business, was the principal proprietor of the firm of Smith, Stanistreet & Co., chemists, Calcutta. He was also interested in several other Indian enterprises. He was in the habit of living a great part of each year in this country, but he generally visited India in the winter. He had formerly resided at the Cape and in Australia.

PRIESTLEY.—Mr. William Priestley, head of the firm of Messrs. W. Priestley & Co., wholesale drysalters and chemists, Manchester, died on September 8, at his residence, Manchester Road, Great Lever. The deceased was a son of the late Mr. James Priestley, cotton spinner and manufacturer, formerly carrying on business at Clough Fold, near Rawtenstall. For many years Mr. William Priestley had been actively associated with the drysalteries, chemical, and drug trade upon premises in Silverwell Yard, and latterly in Wood's Court, Deansgate, Bolton. He had not been in good health for some months, but had attended to business up to the beginning of September, when he went to Manchester. On his return, however, he became very ill, and had since been confined to home, and under the medical treatment of Dr. Scowcroft. The deceased, who was 36 years of age, leaves a widow and several children.

THERE are twenty-four schools of pharmacy in Italy, and last year there were 1,684 students in attendance. So says *Meyer's Druggist*; and, if true, it would be good to teach the students how to make non-poisonous ice-cream, and then send a mission of them to their compatriots in this country.

Trade Report.

Notice to Retail Buyers:—It should be remembered that the quotations in this section are invariably the lowest net cash prices actually paid for large quantities in bulk. In many cases allowances have to be added before ordinary prices can be ascertained. Frequently goods must be picked and sorted to suit the demands of the retail trade, causing much labour and the accumulation of rejections, not all of which are suitable, even for manufacturing purposes.

It should also be recollect that for many articles the range of quality is very wide.

42 CANNON STREET, E.C., September 12.

BUSINESS is still greatly hampered by the dock strike, the continuation of which is all the more regrettable as there are indications that but for it there would be a very satisfactory trade doing in the drug and chemical branches. The alterations which we have to report this week may be shortly summarised as follows:—Camphor is decidedly firmer for raw, and refined is also stiffly held by agents and manufacturers. Caraway seed, cascara sagrada, jalap, and ergot of rye are reported in strong demand at somewhat higher rates. For oil of star-anise more money is asked, while castor and olive oils have also further advanced in price. There has been an improved demand for the better qualities of gum arabic. On the other hand, the cinchona sales resulted in a disappointment, and quinine is hanging fire or lower. Chamomiles, copaiba, and spermaceti are also easier. The appearance into the market of synthetically-made carbolic acid is not likely to influence the price of the coal-tar product at present. Acetate of lead is a little dearer. In the drysalteries market shellac and gambier have advanced.

ACID (CARBOLIC).—Firm at 1s. 5d. for iced and 1s. 6d. for detached crystals, 40° C. melting-point, and 4d. per lb. less for bulk. A well-known German firm of chemical manufacturers are now bringing on the market a synthetically-made carbolic acid, the process of manufacture of which is at present still more or less shrouded in mystery. The melting-point of this acid is at 41°-42° C. (106°-108° F.); it boils at the temperature established for pure carbolic acid, viz., 178° C. (352° F.)—that is to say, at 181° C. (358° F.) if the thermometer is enveloped in steam; it is entirely free from water, colourless, and gives a clear solution in water. The most characteristic distinction, however, between the product and that made from tar is the smell, which is described as a “weak pure smell, not in the least resembling tar.” In an aqueous solution of 5 per cent, it is hardly recognisable by the smell, whereas the qualities at present in the trade in similar dilution are still noticeable by an unpleasant odour. The chief point of merit claimed for it, in fact, is the total absence of any disagreeable smell not peculiar to pure phenol, and the immunity from prejudicial by-effects, apt to arise from impurities in carbolic acid. The synthetical acid is offered liquid or in loose crystals. The price of the new acid is very considerably in excess of that made from coal tar, and, though improvements in the method of manufacture, and, perhaps, competition, may shortly bring it nearer to the price of the coal-tar product, the discrepancy will, undoubtedly, greatly affect its use. The principal effect which we anticipate for the new acid at present is that the fact that it can be turned out in unlimited quantities will operate against an undue rise in the coal-tar acid, and tend to keep the quotation for the latter down to a reasonable level. The new acid has a distinct smell of carbolic, though less pronounced than the coal-tar acid, and we understand that, like the latter, it is liable to the drawback of turning red. The present quotations for the synthetic acid are 1s. 7d. to 1s. 9d. for liquid in large quantities (say 10 tons), and 3d. more for crystals.

ACIDS.—*Citric* quiet at 1s. 3½d. per lb. *Tartaric* dull and neglected at 1s. 2½d. to 1s. 3d. nominally, according to brand. *Acetic* more required for. *Oxalic* very dull, at 4½d. nominally. *Gallic* and *Tannic* firm, the former at 2s. 7½d. to 2s. 3d., the latter at 1s. 10d. for powder, and 2s. for crystals.

BALSAM COPAIBA again lower, with sellers of good bright Maranham at 2s. 3d. per lb.

CALABAR BEANS.—In Liverpool somewhat higher prices have been paid recently, and nothing is now obtainable under 7½d. per lb.

CAMPHOR (RAW).—The market has risen still further, and several transactions are reported at 102s. 6d. c.i.f. for near at hand, and 100s. for November-December shipment, but holders now refuse to sell any more at these terms. It is doubtful whether on the spot 105s. per cwt. would still buy. Our imports from Japan this week have been 102 tubs.

CAMPHOR (REFINED).—Firmly held at the previous rates.

CASCARA SAGRADA firmly held and tending higher. On the spot good genuine bark is still offered at 75s. per cwt., and to arrive 65s. to 70s. is asked. The *Oil, Paint, and Drug Reporter* believes that there must be a large stock of bark in New York or to arrive on contract, and, though part of it will hardly pass muster as prime, judging by the frequent rejections of stock tendered as contract deliveries, there is probably more than enough high-grade bark to meet the requirements of trade. The heavy decline in prices since stocks began to arrive in considerable quantities at distributing points bears out the prediction made early in the season that the supply would be excessive, the extreme prices realised last year having been a sufficient incentive for the gathering of a big crop. From reliable sources we learn that one commission house on the Pacific coast has recently handled 200,000 lbs. of cascara (half the estimated annual consumption of the world), and, as there are several California and other western firms doing as large if not a larger business in the bark as first hands, it may safely be said that at least 500,000 lbs. have been marketed by them this season.

CHAMOMILES.—The market remains very quiet, and prices are still tending lower, say at 40s. to 42s. 6d. per cwt. for good pale Belgian, and 34s. to 36s. for good second pickings.

CINCHONA.—The periodical auctions were held on Tuesday when the following small supply was offered:—

	Packages	Packages
Ceylon bark	725	of which 584 were sold
East Indian bark ..	129	" 9 "
South American bark ..	1,490	" 620 "
Total	2,344	" 1,213 "

If the South American barks, largely made up of inferior Calisayas and Cupreas of old importation, be deducted, it will be seen that the sales were of very small importance indeed. The Dock Strike is made to some extent responsible for the poverty of the supply, and, should it be at an end in time to allow the recent arrivals, which have been rather heavy, to be unloaded, we shall probably have a very heavy sale on September 24. To-day the assortment, as well as the quality, was extremely poor, and competition was almost entirely absent, two brokers buying in their entire supply. The tone can only be described as a weak one, and even the most sanguine attendants of the auctions do not put the prices realised at more than equal to those of the last sales. We should, however, be inclined to place them slightly lower for all except a few good lots, and to put the average unit at 1½d. to 1¾d.

The following are the quantities purchased by the principal buyers:—

	Lbs.
Agents for the Mannheim and Brunswick works	80,971
" the American, French, &c., works	37,201
" the Brunswick quinine factory	26,730
" the Frankfurt o/M. and Stuttgart works	22,781
Messrs. Howards & Sons	9,440
Agents for the Aurbach works	2,920
Sundry druggists, &c.	8,695
Total quantity sold	188,738
Bought in or withdrawn	172,693
Total quantity catalogued	361,431

It should be well understood that the mere weight of bark purchased affords no guide whatever to the quinine yield represented by it, firms who buy a small quantity of bark by weight frequently taking the richest lots, and vice versa. An analysis of the catalogues gives the following prices for sound bark:—

CEYLON BARK.—Original: fine yellow chips, 5½d.; an

exceptionally rich lot, 9d.; a case of fine strong Ledger quill, 1s. 4d. per lb. Red chips, branch and stem, dull to fair, 1d. to 2d.; one parcel, 4d. per lb.; shavings, 2d. to 3½d.; and a rather large proportion of root, from 2½d. to 3½d. per lb. Grey, branch and stem chips, ordinary dusty to good strong, 1½d. to 4d.; good spoke shavings, 4d.; root, from 4½d. to 7d. per lb. *Renewed*: Yellow chips, 7½d. per lb. Red Chips—Ordinary to good fair, of which the bulk of the supply consisted, 1½d. to 4½d.; fine, up to 7d. per lb.; good spoke shavings, 4d. to 5½d.; grey, fine bold rich stem-chips, 9d. to 9½d.; shavings and chips, 5½d. to 6d. per lb. *Hybrid*: Root, 6d.; shavings and chips, 5½d. to 6½d. per lb.

EAST INDIAN BARK.—A few packages of fair red shavings brought 4d. per lb.; dull grey chips, 2½d. per lb.

SOUTH AMERICAN BARK.—Of 324 packages cultivated Bolivian *Calisaya* quill, mostly of very poor quality for that class of bark, 622 packages were sold at 5d. to 6d., a few 6½d. per lb., except one or two better lines, which brought from 8d. to 8½d. per lb. A large quantity of *Cuprea* bark, mostly 1882 and 1883 imports, was bought in at 3½d. to 4d. per lb. nominally. Ten bales, very common, sold at 1½d. per lb. Three bales *Carthagena* brought 3d. per lb.

From Java the shipments during the last five seasons, July 1 to June 30, have been as follows:—

—	1888-9	1887-8	1886-7	1885-6	1884-5
Govt. plants.	Amst. lbs. 815,506	Amst. lbs. 675,986	Amst. lbs. 660,433	Amst. lbs. 457,267	Amst. lbs. 419,460
Private "	3,599,525	2,916,927	1,569,842	1,073,889	776,510
Total	4,415,031	3,492,913	2,230,275	1,531,156	1,195,970

COCAINE steady, but without change in price.

CREAM OF TARTAR.—This article is almost a dead-letter at present; nominally 90s. is quoted for best French crystals, but to sell, less would probably have to be accepted.

CUBEBS.—Still held at steady rates, from 24l. for mixed and somewhat stalky to 27l. for good genuine. The shipments from Java during the season 1888-89, which closed on June 30 last, have been 883 piculs, of which 671 were shipped to Holland, 17 to England, and 307 to Singapore.

ERGOT OF RYE is reported dearer, and sales are said to have been made at 1s. 3d. per lb. for good *Russian*. Bold *Spanish* is still held at 1s. 8d. per lb.

ETHER is said to be tending higher owing to the advance in the price of spirit in Germany. At present 30s. for Hamburg is still quoted for 0·73s.

GALLS.—China are held at 70s. on the spot nominally. We only hear of a comparatively small transaction in new-crop galls at 60s. c.i.f., October-November, this week.

GAMBIER.—Prices have been dearer again this week, but close somewhat easier. Block August-September shipment has been done at 28s. 6d. up to 29s. 3d., closing at 29s. per cwt.

GLYCERINE.—No alteration. Quotations still run from 63l. to 64l. for double-distilled, s.g. 1·260.

GUINEA GRAINS.—Quiet at 25s. to 26s. 3d. per cwt. in Liverpool.

GUM ARABIC.—There has been a much better inquiry for good-class gums during the last few days, and *White Mogadore* has sold at up to 95s. to 97s. 6d. per cwt. *Senegal* gum quite neglected for the moment, and nominal in price.

GUM TRAGACANTH.—The new crop is arriving somewhat slowly at the shipping ports in Asia Minor, and the holders are spreading the report that the quantity is very small this year, and stand out for higher prices, which the buyers refuse to concede. At lower rates there would be plenty of buyers for the French and English markets, but as it is they hold off.

HONEY.—*Chilian* quieter, at 39s. to 40s. for the best. Reports from San Francisco regarding *Californian* honey are very strong.

INSECT FLOWERS—The season is practically over, and business is very dull in the article.

IODINE maintained at 9d. per oz. for crude. *Iodide of potassium*, 11s. 6d. to 11s. 9d. per lb., according to quantity.

JABORANDI LEAVES are reported in good demand in Liverpool at 6d. per lb. for current quality.

JALAP.—A considerable inquiry is said to have set in lately, and we hear of several sales at 6½d. to 7½d. per lb. for *Vera Cruz*.

JUNIPER BERRIES.—Higher rates are asked in Italy for the remainder of the old crop, which is in firm hands. The new crop, to be delivered in Sept.-Oct., is quoted at 6s. 6d. per cwt. f.o.b. Leghorn, or 1s. less than the old berries.

LEAD (ACETATE).—Dearer in Germany owing to the advance in the prices of the metal. Best white is now quoted at 22s. 6d. to 23s. on the spot here, or 21s. 6d. f.o.b. Hamburg.

MANNA.—The crop is now being got ready for shipment from Palermo, but the second pickings are still proceeding in the country. The quality of the crop this year is very satisfactory, and the quantity obtained has also been a large one. Fine selected flakes are quoted at 2s. 0½d. to 2s. 9½d., broken flakes at 1s., and Gerace sorts at 9d. per lb. f.o.b. Palermo.

MEDICINAL HERBS AND FLOWERS.—In Germany a large crop of *Arnica* flowers of fine quality has been gathered this season, and the yield of *Stramonium herb* has also been particularly fine and satisfactory in quantity. On the other hand, *Belladonna* has been a great failure. *Lavender* flowers have been scarce in France this year, the yield not being sufficient to cover the consumption.

MERCURIALS unchanged in price at present.

MUSK.—*Tonquin* pods of good quality are still very firmly held, but there is not much business passing in the article pending the coming drug auctions.

OIL (CASTOR) has further advanced, and good *Calcutta* seconds are no longer obtainable under 3½d. per lb., which has been paid, while 3½d. is now generally asked. Firsts held at 4½d. per lb. Finest medicinal *Italian* quoted at 5½d. per lb.

OILS (ESSENTIAL).—*Star-anise* oil has advanced about 2d. per lb. on the spot, 6s. 1d. per lb. being reported paid to-day. *Cassia* oil neglected at 3s. 5d. *Citronella* dull at 1½d. to 2d. per oz. *Lemon-grass* quoted at 1½d. per oz. nominally. *Peppermint* oil dull for American, with sellers of H.G.H. at 11s. 6d. per lb.

OIL (OLIVE).—The better qualities of oil are held with increased firmness, owing to the reports from the producing countries. We quote *Spanish* oil at 36l. to 37l.; *Sicilian* at 34l. 10s. to 36l.; and *Mogadore* at 33l. to 33l. 10s. Reports of the growing crop in the South of France and on the Italian Riviera are unfavourable. In Northern Italy the market has advanced sharply in consequence of a speculative movement initiated by the report that the new crop will be a very poor one. From Messina, on the other hand, we hear that no exportation whatever is taking place, business being confined to local speculation. The Gioja crop is described as progressing splendidly, and the Messina stock of oil as rather heavy, and it is said that the advance reported from elsewhere does not rest upon a sound basis.

OPIUM.—The latest reports from Smyrna state that holders there, as well as at Constantinople, have withdrawn from the market in the hope that prices will further advance. Under these circumstances very little business has been done. Reports from the interior state that the poppies on the highlands have given a very small yield of juice this year, and locally the prices paid are said to be much higher than at the shipping centres. Yerli opium especially is much sought after, the quantity being very small this season. Up to August 30 the arrivals of new opium were at Smyrna 900 cases, against 2,050 the year before; at Constantinople 630, against 1,232 in 1888.

QUININE has been rather dull this week, though an aggregate sale of about 50,000 oz. of German (B. & S. and Brunswick) in second-hand is reported at 1s. 2½d., but closing at 1s. 1½d. per oz. on the spot, and 1s. 2d. to 1s. 2½d. for December. The closing tendency is weak.

QUICKSILVER.—The importers maintain the metal at 9l. 15s.; second-hand holders at former towards the close, and will not sell under 9l. 7s.

SAFFRON very scarce and dear. Best *Valencia* has sold up to 62s. 6d. per lb., while for the *Alicante*, which three seasons ago sold at 24s. per lb., no less than 41s. 6d. must now be paid.

SCAMMONY.—The new scammony is now arriving in London, the last Smyrna steamers having brought rather a heavy quantity. The Smyrna market is very firm, with buyers at high prices; first to extra quality at 25s. to 29s., seconds at 20s. 9d. to 21s. per lb.

SENEGA.—The root is firmly held at 1s. 11d. per lb. for good bright quality.

SHELLAC.—The week opened rather dull, and on Monday, in consequence of the heavy quantity advertised for public auction on Tuesday, very little business was done, and that only at some decline. At the weekly auctions the offerings consisted of—

	Cases	Cases
Orange lac ..	.. 1,134	of which 524 were sold
Garnet ..	.. 747	" 580 "
Button ..	.. 193	" 21 "
	2,074	1,128

A very good competition prevailed throughout the auctions, second orange and button lacs selling at nearly the advance established the week before, while garnet sold especially briskly, notwithstanding the large quantity offered, at an irregular advance of 6d. to 1s. 6d. per cwt. The following prices were paid: *Orange lac*, fine bright strong worked, 73s.; good red seconds, worked and unworked, 71s. to 72s.; livery and reddish, 69s. to 70s.; cakey and out of condition, 67s. to 68s. per cwt. *Garnet lac*, good bright free AC, 57s., rising to 58s. 6d.; dull blocky, 55s. to 56s. *Button*, good but cakey to fine strong seconds, 86s. to 92s.; thirds, 81s. to 86s. per cwt.

The following were the quotations at to-day's call:—

	Sept.	Oct.	Nov.	Dec.
TN Orange, sellers ..	72/	72/6	73/	73/6
buyers ..	71/	72/	72/6	—
AC Garnet, sellers ..	60/	61/	61/	61/
buyers ..	58/	58/	60/	60/6

These figures are from 1s. to 1s. 6d. better than yesterday for orange lac. Subsequently business was done for September delivery, TN at 71s. 6d., while AC garnet has sold at 58s. 6d. to 59s. on the spot.

SPERMACETI in large supply, and lower to sell. American refined, 10½d. per lb.

SPICES.—On Wednesday the public sales, which had been suspended for three weeks, owing to the strike, were resumed, but the demand for nearly all articles was extremely dull. *Cloves* have been sold privately early this week at 6½d. for fair Zanzibar. On Wednesday the market was flat, and prices went ½d. lower; fair to good fair, 6½d. to 6¾d. *Cassia lignea* quiet at 22s. per cwt. *Capiscums*, good to fine red, off stalk, W.C. Africa, 18s. to 20s. 6d.: *Pimento* steady at 3¼d. for fair. *Mace* and *Nutmegs* steady of sale. Cochin ginger dull of sale, but Jamaica fetches full prices; medium to fine washed, 72s. to 100s. per cwt. *White pepper* dull of sale, but afterwards steadier; good Penang, 8½d. per lb.

TEA.—Business in tea remains very limited through the continuation of the strike, though public sales for the week for all kinds have been heavier, and deliveries are now going on much faster from most of the warehouses. There is but little demand alike as regards the country and the London market for Congous, though a few fair Keemuns and Mingchows have sold from 10d. to 11d., and some useful Oonfaas from 7d. to 8d., though these latter are all more or less touched with tar. New Saryunes are wanted from 9d. to 11d., chiefly for export, and some full prices have been made, though common new Saryune has sold as low as 5¾d. Scented and green teas are very quiet, with little offering. *Assams* have sold at easier rates for lower grades, fair Souchong and Pekoe Souchong selling as low as 4¾d. to 5½d. per lb.—very good value at such figures, and worth using very freely in retailers' lower-priced blends. Good liquorizing Pekoes under 1s. are wanted, but are in small supply, and all "stand out" teas fetch extreme prices. Buyers cannot go far wrong in buying low-priced leaf Assam at present figures—6d. and under—enough to last for a month or so, but in a very few weeks' time a good assortment of better teas may be expected, and present purchases will look dear. Curiously enough, while commoner Indians are being sold at low figures, common Ceylons are even dearer than last week.

VALERIAN ROOT.—The price is nominal at 24s. for the old root. The new crop will be coming in towards the beginning of October.

THE AMERICAN MARKETS.

(From our own Correspondent.)

NEW YORK, August 30.

QUININE has been the principal topic in our market this week, and showed something of its old-time activity. In order that your readers may understand the position, I wish to explain that at present there are only two quinine factories in operation—one in Philadelphia and one in this city. The latter is supposed to be only working in a small way, off and on. This market, therefore, has to depend on Germany for the great bulk of its supplies, and, as will be seen from the following, the importations are largely in excess of those of last year.

Oz.
Total quinine received at New York from Jan. 1 .. 1,818,126
" " " same time, 1888 .. 1,154,200
Excess in 1889 663,926

There can be no doubt, however, but the great bulk of this has gone into consumption, for the demand this year has been very large, in fact larger than ever before known. There is still a large stock—fully 700,000 oz.—held by speculators, most of it at high prices, for, strange to say (and still not strange, for this is the way they often act), there were more of these parties sellers, when quinine was at its lowest, than there were buyers. This week fully 200,000 oz., embracing all the cheap lots, have been cleared off the market, and as the German agents are all quoting equal to 1s. 3d., less 5 per cent., an advance of fully 3d. an ounce has been established. At present the country druggists are holding back, for although they carry light stocks, they have been so often bitten by spurious spurts in price that they have grown cautious, and will not pay the advance till obliged. The next two months are the largest for consumption, so that they cannot hold out very long. Second-hand holders offer sparingly at 28c., for a further advance is expected, and Powers & Weightman's price being only 32c. for bulk, they argue if this firm raise their quotations it will help the general market for this article. As to the future, opinion here is divided, but the general idea is that no large advance is possible, and, while the price may decline again slightly, the market may not again see 11½d. for a long time.

OIL OF PEPPERMINT.—The new-crop oil is being freely offered from the interior, and is meeting with a fair demand at the following prices:—

	s. d.
Wayne County fine oil	9 0 per lb.
Michigan	8 6 "

at which there have been small sales for export. The demand at this season is unusually large, but up to the present writing there does not appear to be any anxiety on the part of European buyers to secure supplies, consequently our market does not present the animated appearance usual at this season. The growers cannot be making much out of the present rates, and, as they are strong holders, lower rates are not expected for the present. There can be no doubt that at some time during this season buyers will have an opportunity to buy oil at lower figures than they will for the next two years, as the low range of values prevailing are not particularly encouraging for farmers to plant any more peppermint than will keep them in roots. The HGH brand would appear to be suffering in popularity, for the falling off in the quantity bottled by Mr. Hotchkiss is surprising, viz.:—

	Season	Cases
Bottled	1886-7	2,900
"	1887-8	1,700
"	1888-9	1,000

As there is a corresponding decline in the shipments of bulk oil, it would seem as if American oil could not compete with Japanese. The growers here claim they cannot make anything out of the peppermint crop when oil goes below \$2.00, and while this is doubted by some the balance of evidence is in their favour. As the price of American oil cannot be reduced, and leave a profit to the producers, it is only a matter of time till they give up the cultivation. Their chief hope at present is that the Japan article will, from some cause or other, advance; there is no denying the fact that it is a formidable competitor, and will receive support as long as it remains half the price of American.



MISCELLANEOUS INQUIRIES.

A large number of correspondents ask us for formulae and other information already published in this journal. It is not fair to more careful readers that we should frequently repeat such information, and so long as the back numbers containing the formulae or replies required are in print we must decline to do so. Back numbers of our weekly issue can be obtained from the publisher at 4d. each.

105/59. *Plumb. Alb.*—The company formed to work Mr. Hannay's new white-lead process are, we understand, building works at Possilpark, Glasgow, but we cannot indicate the precise address.

123/45. *Anxious Enquirer.*—We do not reply to anonymous questions.

123/67. *Help* writes:—"For Blue and Red Tiver, soft and free, I would recommend your correspondent (115/70) to apply to Messrs. Colthurst & Harding, Phoenix Colour Works, Bristol, whose production would be sure to give satisfaction. Mr. E. F. Goodall, barytes and colour manufacturer, Duffield, near Derby, also writes that he supplies this article."

122/8. *P. Mc.M.—Ung. Styracis:*—

Ol. olivæ ..	..	..	..	..	..	3xij.
Styrax præp.	..	..	..	..	..	3vij.
Resinæ ..	..	..	..	..	..	3xivss.
Elemi ..	..	..	..	..	..	3vij.

Melt and strain. Ft. ung.

73/68. *Nemo.*—The powder for preserving boiled bones which you send is boracic acid in rough powder.

120/45. *Incleta.*—To obtain your ginger-beer bright and without sediment have your ginger coarsely ground, and fine by the addition of white of egg and egg-shells. By using German yeast you will be able to avoid the beery flavour you complain of. Glad you have found our advice useful.

110/13. *A. M. P.* wishes to know of a "sticky substance" to catch insects which crawl up fruit trees and destroy the foliage—something that will stand "hail, rain, or shine"—coal-tar, bird-lime, &c., all dry up quickly in the open air, and consequently fail. Try formula for "sticky fly gum," with the addition of a small proportion of vaseline. See "Dum Spiro Spero," August 31.

123/50. *H. G. N.*—Do not bother about the directions to boil. Simply dissolve the wax in the oil with the aid of heat; then add to the honey in a warm mortar, and stir until cold.

123/12. *Archer* wishes to know the quantity of ether necessary for dental extraction, also whether it is sprayed on or the vapour used. If local anesthesia only is wished the spray is applied to the tooth for a few seconds; if general anaesthesia, the vapour is inhaled in the same manner as chloroform. The quantities can only be ascertained by practice, and depend upon the manipulation of the operator in the first case, and upon the idiosyncrasy of the patient in the second.

109/11. *Mitre.*—*Incense for Churches.*—Gum olibanum, 9 oz.; benzoin, 5 oz.; storax, 2½ oz.; sugar, 2 oz.; cascarilla, 1¼ oz.; saltpetre, 3 oz. Powder and mix.

123/49. *Hypatia.*—The qualifications necessary for obtaining a Dispensership in the Naval Hospitals are:—Must be not less than 20 years nor more than 25 years of age; possess the Minor or Major qualification of the Pharmaceutical Society, preferably the Major. The pay commences at 5s. and rises through time to 10s. per diem, with allowances on certain stations, and superannuation when entitled to it. The dispensers in the army are taken from the Army Hospital Corps, particulars concerning which you can obtain at any post-office.

117/54. *Constant Reader* is referred to the Educational number, published in September last year, for full information concerning the four veterinary colleges in Great Britain, all of which accept the Pharmaceutical Preliminary in place of their own.

123/53. *C. Chorley.*—We do not think so, but the Secretary, Pharmaceutical Society, Bloomsbury Square, London, will supply you with a list of the various examinations accepted in place of the Preliminary on application. For list of veterinary colleges, see answer to "Constant Reader."

121/16. *Nemo.*—We cannot give you the formula for *Down's Farmers' Friend*, but you will find that

Impure sulphate of iron ..	..	..	..	6 lbs.
Impure sulphate of copper ..	..	..	..	2 "
Crude carbolic acid ..	..	..	..	2 oz.

will give you a good carbolised wheat-dressing. Powder the sulphates, and incorporate the acid with them; leave exposed to the air in a dry place for a day or two before packing.

119/12. *Mastic.*—A superior *Mastic Varnish*, closely resembling what you want, may be made as follows:—

Mastic ..	..	..	..	..	..	5 lbs.
Glass (broken small) ..	..	..	..	..	..	3 "
Turpentine (warmed) ..	..	..	..	..	..	2 gallons.

Roughly mix the mastic and glass; add to the turpentine; dissolve by means of a gentle heat; filter if necessary.

123/18. *Zulu.*—*Starch Gloss.*—Spermaceti 1 part, starch 3 parts; borax, 4 parts. Hard paraffin makes a good gloss.

125/15. *Red Worms and Snakes in Pheasants.*—*Mr. Clarkson*, of Surrey House, Cowes, I.W., in reply to "Shah," states that Clarkson's embrocation mixed with the food of pheasants, or diluted with water, will kill "red worm" in those birds.

123/68. *H. T.*—You can recommend and sell your patent medicines, and give advice concerning them, so long as you hold a patent-medicine licence and do not claim any legal qualification, medical or otherwise.

124/32. *Annie Seed.*—A perfume, cheap and *recherché* for a toilet preparation, may be obtained by using ol. canangæ odorata, or for such a preparation as glycerine and cucumber jasmin pomade.

123/19. *Cheap Inks.*—*G. S.* wants a formula for an ink to supply shoemakers with at 1s. 4d. per gallon. The cheapest inks can be prepared from logwood, common sulphate of iron, and gum. Let the proportions suit your price, add a trace of carbolic acid or creosote to preserve, and you cannot go wrong. Leave the ink exposed to the air for a month before retailing.



SHOP BOTTLES & JARS

WITH VITRIFIED (burnt in) LABELS

(Black Letters on a ground of Pink or White Enamel).

Labels indestructible and of elegant appearance, forming an even surface with the glass or porcelain. The Jars of best porcelain, thoroughly greaseproof. The Bottles hand-made and of superior quality. Both are unsurpassed by anything in the market in every respect. Also a CHEAPER sort of Bottles and Jars, with labels equally indestructible, but very plain, especially suitable for Dispensaries, &c. Intending Buyers are requested to inspect Samples at



H. POTHS & CO.,

4 CREECHURCH LANE, LEADENHALL STREET, E.C.

A large number of Shops have been fitted up with these Bottles and Jars, both in England and the Colonies, a list of which can be had on application.

LATEST NOVELTIES:

POISON BOTTLES of Ribbed Blue Glass, with RAISED White Vitrified Letters, and the Word "Poison" in Red at foot.

DRAWER LABELS of Crystal Glass, with Bevelled edges and Vitrified Labels to match the above Bottles and Jars.

A STANDARD LIST OF LABELS for Chemists' Shop Bottles, Jars, and Drawers will be sent free on application.

A Stock of small sets always on hand.

TELEGRAPHIC ADDRESS: "POTHS LONDON."

[1]

PURE OXIDE OF ZINC (HARRIS'S)

SPECIALLY PREPARED FOR PHARMACEUTICAL PURPOSES.

PHILIP HARRIS & CO., LTD., Manufacturing Wholesalers and Export Chemists, **BIRMINGHAM.**

CRYSTAL PALACE JOHN BONDS GOLD MEDAL MARKING INK

CHEMISTS AND DRUGGISTS ISSUING LISTS

Are invited to send particulars of spaces to let, &c.

This old-established leading article is now selling more than ever. Kindly display in window and on counter, and so greatly increase your sale
Gratis, a useful Present with every 6d and 1s. bottle.

Works:—75 SOUTHGATE ROAD, LONDON, N.

We would draw the attention of Chemists to the fact that we are largely Advertising.

VICHY LAXATIVE POWDER

Of Dr. Léonce SOULIGOUX,
FOR

CONSTIPATION, APOPLECTIC TENDENCIES, ENLARGEMENT OF THE LIVER,
CONGESTION OF THE BRAIN, HEMORRHOIDS, MIGRAINE, ETC.

Sold in Bottles, **2s. 6d.** Retail; **24s.** per dozen.

WHOLESALE DEPOT FOR THE UNITED KINGDOM—

BURGOYNE, BURBIDGES, CYRIAX & FARRIES,
12 and 16 Coleman Street, LONDON, E.C.

PARIS DEPOT—CHASSAING & CO., 6 AVENUE VICTORIA.

WYLEYS & CO.

**MANUFACTURING CHEMISTS
AND
DRUG GRINDERS.**

**WAREHOUSES, LABORATORIES, AND DRUG MILLS,
COVENTRY.**

WYLEYS' PEARL-COATED PILLS.

All mixing, cutting, rounding, picking, &c., is accomplished with the aid of steam machinery, by which means we attain a uniformity in composition and size such as cannot be equalled by hand-work.

For finish, and general good appearance, they will compare most favourably with any in the market.

WYLEYS' GELATINE-COATED OVAL PILLS.

The only oval gelatine-coated pills of English manufacture in the market.

Our "Prices Current" contains an extensive list of coated pills, showing formulæ and prices, together with a number of TESTIMONIALS. Estimates for private formulæ supplied.

PODOPHYLLIN PUR.

(STANDARDIZED).

Finding great variation to exist in commercial samples, not only in regard to solubility in Rectified Spirit and Ammonia, but also in respect to the amount of the active portion of the resin (Podophyllotoxin), we have commenced the manufacture of this article. We can, therefore, supply *Resina Podophylli* of guaranteed purity and standardized to a definite strength. Owing to its freedom from decomposition products and the non-employment of alum (which gives the bright yellow variety), our product is distinguished by being nearly white.

Price 2s. per oz.

THE DURAPLASTIC COATED HORSE BALL.

(PATENTED.)



"The obvious superiority of these balls over the old paper-wrapped articles will impress the most stolidly conservative of farmers."—*The Chemist and Druggist*, October 27, 1888.

No. 4.—Alterative Balls	...	...	24/	per gross.
„ 5.—Astringent Balls	...	...	24/	"
„ 12.—Condition Balls	...	...	24/	"
„ 6.—Cordial Balls	...	...	24/	"
„ 7.—Cough Balls	...	...	24/	"
„ 16.—Cough Balls	...	...	27/	"
„ 17.—Cough Balls	...	...	27/	"
„ 8.—Diuretic Balls	...	...	24/	"
„ 9.—Fever Balls	...	...	24/	"
„ 1.—Physic Balls, 4 drs.	...	...	24/	"
„ 2.—Physic Balls, 5 "	...	...	30/	"
„ 3.—Physic Balls, 6 "	...	...	36/	"
„ 18.—Physic Balls, 7 "	...	...	42/	"
„ 19.—Physic Balls, 8 "	...	...	48/	"
„ 15.—Stimulating Balls	...	...	24/	"
„ 10.—Tonic Balls	...	...	24/	"
„ 11.—Tonic Balls	...	...	20/	"
„ 13.—Worm Balls	...	...	30/	"
„ 14.—Worm Balls	...	...	60/	"

PRIVATE FORMULÆ.

WYLEYS & Co. will be glad to prepare Patent Duraplastic Balls from private recipes.

NAME and ADDRESS may appear on orders of 2 gross assorted balls.

Branch House: HOPKIN & WILLIAMS, 16, CROSS ST., HATTON GARDEN, LONDON, E.C.

Established
1798



Howards & Sons

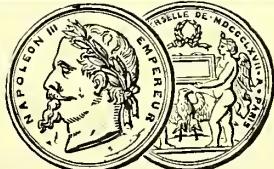
QUININE, CINCHONA ALKALOIDS,

Acetates of Soda & Potash
Acids, pure.
Æthers, pure & methylated.
Antimony preparations.
Benzoic Acid & Benzoates.
Bicarbonate of Potash.
Bicarbonate of Soda (Howards').
Bismuth preparations.
Borax & Boracic Acid.
Bromides of the Alkalies.
Caffeine.
Caffeine Citrate, P.B.
Camphor Bells, Blocks, & Flowers.
Citrate of Iron & Quinine, P.B.

Citric Acid & Citrates.
Cocaine and its Salts.
Corrosive Sublimate.
Ext. Cinch. Liq. P.B., & H. & S.
Ext. Cocæ Liq. P.B.
Iodides of the Alkalies.
Iodoform.
Liq. Bismuthi et Am. Citratis.
Magnesia.
Mercurials, Calomel, &c., &c.
Rochelle Salt & Pulv. Seidlitz.
Spirit preparations.
Terebene.
Urethane. &c., &c.

AND OTHER PHARMACEUTICAL CHEMICALS.

Stratford, Essex.



Detailed Price Lists on application.

BARRON, HARVEYS & CO.

GILTSPUR STREET, LONDON, E.C.

Beg to inform their friends and the Trade generally that, having purchased the Business of

BARRON, SQUIRE & CO., BUSH LANE,
and also the various Formulae of the Special Preparations of
JAMES BASS & SONS, HATTON GARDEN,

they are prepared to execute orders for the same, and pledge themselves to supply them in all their integrity.

Specimens of these Preparations have remained in the Museum of Kew Gardens during 23 years without deterioration.

INTERNATIONAL FISHERIES EXHIBITION, LONDON, 1883.

COD LIVER OIL.

Low Quotations on application. Delivered at London or Liverpool.

The Only GOLD MEDAL
For British Exhibitors was awarded to
T. J. SMITH,
10 & 11 NORTH CHURCH SIDE, HULL.
Importer of Norwegian, Newfoundland, & other varieties.

ACID. ACETIC, B.P., ACID. ACETIC. GLACIAL. Pure for Vinegar & Pickles.
PEROXIDE of HYDROGEN, for Bleaching Feathers, Hair, Silk, Jute, Ivory, Bone, &c.
NITRATE OF AMMONIA. Pure for Dental purposes. Common for Ice Machines.
PHOSPHORIC ACID, B.P. strength and concentrated, Pure and Free from Arsenic.
LIQ. FERRI PERCHLOR. FORT., B.P. Free from Arsenic, and Soluble in Spirit.
HYPOPHOSPHITES of LIME, SODA, &c. **CYANIDE of POTASSIUM.**

Ferri et Ammon. Cit., Ferri et Quiniæ Cit., B.P., and other Scale Preparations.

DUNN & CO., Stirling Chemical Works, WEST HAM, LONDON.

C. R. HARKER, STAGG & MORGAN

WHOLESALE & EXPORT DRUGGISTS

MANUFACTURING CHEMISTS

IMPORTERS & DISTILLERS of ESSENTIAL OILS

PHARMACEUTICAL EXTRACTS—FLUID AND SOLID.

STANDARDIZED AND GUARANTEED DRUGS AND PREPARATIONS.

15 LAURENCE POUNTNEY LANE, & ARTHUR ST. WEST, LONDON, E.C.

REGISTERED ADDRESS FOR TELEGRAMS—"EDULCINE LONDON." Telephone No. 1949.



For the convenience of Chemists, and to secure the "A I" COD LIVER OIL being placed in the hands of the Public perfectly sweet, we have packed it in 8-oz. and 16-oz. Green Flint Oval and Flat bottles, at the LOWEST POSSIBLE PRICE.

The bottles are sent out either without labels of any kind, or with the blue trade-mark labels over the cork, and are either plain or capsuled. The corks are of best quality, and the bottles are packed in boxes with divisions specially made for the purpose, which are charged, but full prices are allowed when returned in good condition.

It will be obvious that by bottling from the original casks, which have not been opened since they left the factory in Norway, the Oil in these small bottles must be in the most perfect condition.

PRICES.

	By 6-doz. Case.	12-doz. Case.	24-doz. Case.
IN BOTTLES, containing 8-oz. fluid	... 6/3	6/0	5/9 dozen, to a/c.
	By 3-doz. Case.	6-doz. Case.	12-doz. Case.
" " 16-oz. "	... 11/6	11/3	11/0 " "

CARRIAGE FREE.

N.B.—If less than these quantities are ordered, carriage must be paid by the Customer, unless the order is made up to the value of £5 with Drugs.

BIRMINGHAM.

SOUTHALL BROS. & BARCLAY.

YOUNG & POSTANS. BISMUTH, PEPSINE & STEEL

GRAN. EFFER. BISMUTH AND PEPSINE
 GRAN. EFFER. BISMUTH, PEPSINE AND STRYCHNINE
 GRAN. EFFER. BISMUTH, PEPSINE AND QUININE
 GRAN. EFFER. BISMUTH, IRON AND QUININE
 GRAN. EFFER. BISMUTH CITRATE
 GRAN. EFFER. BISMUTH, IRON AND STRYCHNINE
 GRAN. EFFER. CITRATE OF CAFFEINE.

GRAN. EFFER. IRON AND BISMUTH
 GRAN. EFFER. IRON, QUININE AND STRYCHNINE
 GRAN. EFFER. IRON AND ARSENIC
 GRAN. EFFER. IRON AND PEPSINE
 GRAN. EFFER. IRON AND QUININE
 GRAN. EFFER. IRON, QUININE AND PEPSINE
 GRAN. EFFER. HYDROBROMATE OF CAFFEINE.

AND ALL OTHER GRANULAR PREPARATIONS.

Now prepared only by **CURTIS & COMPANY**, 48 Baker Street, Portman Square, LONDON, W.

GRANULAR EFFERVESCENT ANTIPYRIN.

(Each Teaspoonful contains 8 grains.)

Introduced by Curtis & Co.

See that this preparation bears our name.

LOFTHOUSE & SALTMER, MANUFACTURING CHEMISTS, WHOLESALE & EXPORT DRUG MERCHANTS HULL,

Manufacturers of all Pharmaceutical Preparations on the best and most improved principles.
QUOTATIONS ON APPLICATION.

SOLUT. AETHERIS NITROSI (Æther. Hyponit.)

1 part to 5 Sp. Vini Rect. 56 o.p. makes Sp. Æth. Nit. 850.
 This concentrated preparation is carefully drawn in our own laboratory, is highly recommended, and is daily finding increased favour with the trade for making Sp. Nitre, as required for use, and thus avoiding the risk of a development of free acid, which is more or less prevalent in Sp. Nitre that has been drawn some time. Price in Winchester Quarts, 3s. per lb., net.

Importers of Cod Liver, Castor, and Olive Oils; Otto de Rose, and all Essential Oils; Valentia Saffron; Vanillas; Fruit Essences; Carmine; Aniline Dyes; Bees Wax, &c., &c. Applications for Special Quotations invited.

T. & H. SMITH & CO.,
EDINBURGH AND LONDON
 Are the ONLY MANUFACTURERS of the
SALTS OF MORPHIA
 To whom, at the UNIVERSAL EXHIBITION, in PARIS, 1878, the
GOLD MEDAL WAS AWARDED.

NEW YORK Office—20 Cedar Street: FRA^s. JAS. MACNAUGHTAN, Agent. [2]

TARTARIC ACID

Technically Pure, in Crystals and Powder, of best quality only; also Chemically Pure;

OF THE

Nienburger Weinstinsäurefabrik
IN NIENBURG a. d. WESER.

SOLE AGENTS FOR THE UNITED KINGDOM—
OSCAR ANDREAE & CO.
26 GREAT TOWER ST., LONDON, E.C.

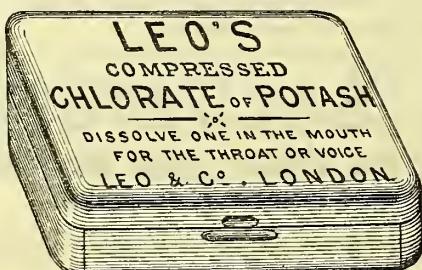
LEO & CO.

MANUFACTURERS OF

COMPRESSED

CHLORATE OF POTASH,

Chlorate of Potash and Borax,
&c., &c.



Our Goods are guaranteed the Best of any of the cheap Compressed Goods in the Market.

They are supplied by all the Wholesale Houses.

Quotations given for large and small quantities.

8 CREECHURCH LANE, LONDON, E.C.
36

METHYLENE,
Obtained by the action of Metallic Zinc on Chloroform and Alcohol.
Discovered to be a general Anesthetic by Dr. RICHARDSON in 1867.
 Bottles, 16s., 8-oz., 8s. 6d.; 4-oz., 4s. 6d.; 2-oz., 2s. 6d.

COMPOUND ANESTHETIC ETHER,
For producing Local Anesthesia.
 In 4-oz., 10-oz., and 20-oz. Stopped Bottles, 2s., 4s., and 7s.

OZONIC ETHER,
 In 2-oz., 4-oz., 8-oz., and 16-oz. Stopped Bottles, 2s., 3s. 6d., 7s., and

PEROXIDE OF HYDROGEN.
First introduced as a Medicine by Dr. RICHARDSON.

ETHYLATE OF SODIUM
Dr. RICHARDSON's Formula, for removing Nævi, &c. In ½-oz. & 1 oz. Bottles, with elongated Stoppers for applying the Caustic, 2s. 6d. &

STYPTIC COLLOID,
For promoting the Healing of Wounds by the first Intenti. In 2-oz. and 4-oz. Bottles, with Brush, 2s. 6d. and 4s. 6d.; 16-oz., 12s.

CHARCOAL CAPSULES
Containing Pure Vegetable Ivory Charcoal.
 In Boxes, 2s. 6d. each.

ESTABLISHED 1837.

H. TROMMSDORFF,

MANUFACTURING CHEMIST,
ERFURT.

SPECIALITIES:

ALKALOIDS

Aconitine,
Arbutine,
Atropine,
Cantharidine,
Chrysarobine,
Codein,
Coniine,
Cotoxin,

Duboisine,
Helleboreine,
Hyoscynamine,
Nicotine,
Picrotoxine,
Saponin,
Solanine,
Strophantine,

Veratrine,
And all other Alkaloids.

PURE CHEMICALS

For Pharmaceutical, Scientific, and Technical purposes.

SOZOIODOL PREPARATIONS.

Sole Agent for the U.K. and the Colonies,

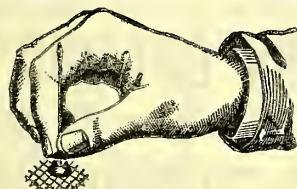
FREDERICK BOEHM, LONDON,
27 Billiter Square Buildings.

**OPPENHEIMER'S
CREAM OF MALT**
(REGISTERED),
WITH COD-LIVER OIL,
AND THE
HYPOPHOSPHITES OF LIME, POTASH, AND SODA

Can be obtained from all Wholesale Houses, or direct from the Sole Manufacturers,

**OPPENHEIMER BROS. & CO., Manufacturing Chemists,
1 & 3 SUN STREET, FINSBURY SQUARE, LONDON, E.C.**

Trade Mark.



REGISTERED.

**THE
ASSOCIATION for the SUPPLY of PURE VACCINE LYMPH,
12 PALL MALL EAST, LONDON, S.W.
SOLE AGENTS FOR DR. WARLOMONT'S CALF VACCINE.**

Tube, 2s. each; Half Tubes, 1s. each. Pomade in vials, 5s.
 HUMAN VACCINE, from healthy children only, microscopically examined and
 source quoted. Tubes, two-thirds full, 1s. 6d. each. Tubes, one-third full and Lan-
 get-charged points, 1s. each. Pin-points, 1s. 1d. each. Extra charged Small
 Points, 5s. Tubes, two-thirds full (same as those mentioned above, but without
 source), in quantities for export, £5 per 100 Tubes. Pin-points uncharged, 1s. per
 dozen. Vaccine Injectors, 1s. 3d. each, including postage. Vaccinations by appoint-
 ment. P.O.O.'s (including postage, and crossed London and Westminster Bank),
 with orders, payable to EDWARD DARKE, Secretary.

Office hours, 10 to 4. Saturdays 10 to 2.

DINNEFORD'S FLUID MAGNESIA



PERFECT IN PURITY AND UNIFORM IN STRENGTH.

The most efficacious antacid and mild
 aperient for Delicate Constitutions,
 Ladies, Children, and Infants.

OF ALL WHOLESALE DRUGGISTS

SEQUAH, LIMITED, desire to call the special attention of the
 Trade to their Preparations—

**SEQUAH'S PRAIRIE FLOWER
SEQUAH'S OIL,**

which have an immense sale all over Great Britain. They wish to
 point out the fact that all vendors of their Preparations are bound
 by agreement to Retail Goods at ONE SPECIFIED PRICE ONLY,
 thus ensuring a fair profit to the Trade, and a mutual protection to
 manufacturers and retailers.

**SEQUAH, LIMITED,
46 FARRINGDON STREET, LONDON.**

"FOR THE BLOOD IS THE LIFE."

**CLARKE'S
WORLD FAMED
BLOOD MIXTURE,
THE GREAT BLOOD PURIFIER AND RESTORER.**

(Trade Mark—"BLOOD MIXTURE." Registered No. 3275)

The Celebrated CURE FOR Scrofula, Scurvy, Eczema, Blood and Skin Diseases, and Sores of all kinds.
 Wholesale of all the Wholesale Houses. Usual terms.

Sole Proprietors, **THE LINCOLN & MIDLAND COUNTIES' DRUG COMPANY, LINCOLN.**

Counter Bills and Posters, with Name and Address, also Show Cards, on application. Printed matter supplied in any Language for Foreign Agents.

CAUTION.—The Proprietors will take immediate proceedings against all persons pirating their Trade Mark, "Blood Mixture," Labels, Wrappers,

&c., or Advertisements, or in any way infringing their rights.

P. J. PETERSEN & CO.

*Wholesale Druggists and Manufacturing Chemists,
CAPE TOWN & KIMBERLEY, CAPE OF GOOD HOPE.*

ESTABLISHED 1842.

London Agents—MESSRS. BORRADAILE & CO., 150 LEADENHALL STREET, E.C.

P. J. P. & Co. can arrange with Pushing Houses to receive Goods on Commission, for Prompt Sale in this Colony and the adjoining States.

PURE CARBONATE OF LITHIA

Price 1,400 fcs. per 100 kilos., or £27 15s. per cwt.

Also all other LITHIA SALTS.

Iodoform, Mercurial Salts, Osmic Acid, Liquid Chloride of Methyl, for the treatment of Rheumatism, Neuralgia, &c.
Tannin, Tartar Emetic, Chloral, Terpene.

SILVER BLACK FOR JEWELLERY.

BILLAULT, 22 Rue de la Sorbonne, PARIS;
*Successor to FONTAINE, PELLETIER, & ROBIQUET, Members of
the Paris Institute.*

PARIS UNIVERSAL EXHIBITION, Classes 45 & 51.

GERMAN BOTANIC DRUGS

In Press-Bales for Export.

PHARMACEUTICAL TINCTURES

OF EVERY DESCRIPTION.

Lapis Haematites Longus.

BECKER & KIRSTEN,

DRESDEN, GERMANY.

MAXWELL'S CHLORIDE OF AMMONIUM INHALER.

The simplest Apparatus yet introduced to the profession.
Requires no strong caustic or acid liquids.
Fumes are invariably neutral.

To be had of all Chemists and Sundriesmen, and of the Proprietors—

ANDERSON & ADAMS

68 GRAFTON STREET, DUBLIN.
LYNCH & CO., London Agents.

P A T E N T.

BUYERS ARE CAUTIONED TO SEE THAT THEY GET THE

GENUINE

DR. JOHN HOOPER'S PILLS,

Which may be known by the Name of the Inventor, engraved in white letters, being on the Government Stamp.



Handbills and Show Cards will be sent on application to

MAY, ROBERTS & CO., 9 CLERKENWELL ROAD, LONDON, E.C.

AMERICAN BUYERS are particularly Cautioned !!

Telegraphic Address—"FEEDING BOTTLES LONDON."



SCHERRING'S CHLORALAMID

New and Improved Hypnotic, Patented and Registered.
Is free from all unpleasant by or after effects usually
observed with hypnotics hitherto used.

Sold
by all Retail and Whole-
sale Chemists and Druggists.

SOLE WHOLESALE AGENTS—
A. & M. ZIMMERMANN,
6 & 7 CROSS LANE, ST. MARY-AT-HILL, LONDON, E.C.

DOSE FROM 20 to 60 GRAINS.

TOWLE'S CHLORODYNE

In CHOLERA, DIARRHEA, DYSENTERY, &c., it has proved itself a most valuable specific, quickly relieving the pain and spasms, and seldom failing to check the disease; for which property, as well as for its value in Sea Sickness (for which it is the best remedy known) it should be an indispensable article in every emigrant's outfit.

THE BEST
BASIS FOR A MIXTURE FOR
DIARRHœA
SPASMS.

LIQ. CHLORODYNI:
SHAKE THE BOTTLE.

PREPARED AT THE
Chlorodyne Manufactory,

A. P. Towle
MANCHESTER.

Refuse Cheap
Imitations.

Refuse Cheap
Imitations.

REVISED PRICE LIST.

		Retail.	Per doz.
		s. d.	£ s. d.
Towle's Chlorodyne	1 1 1/4	0 8 6
Ditto	2 9	1 3 0	
Ditto (3 fluid oz.)	4 6	1 16 0	
Ditto (8 fl. oz.)	11 0	4 13 0	
Liq. Chlorodyn (Original and only Genuine) 1/2 lb.	..	1 10 0	
Ditto ditto 1/2 lb.	..	2 14 0	
Ditto ditto 1 lb.	..	4 16 0	
Winchester Quarts (6 lb.) 7/6 per lb., bottles free.			
Towle's Antibilious Pills	1 1 1/4	0 8 6	
Ditto	2 9	1 3 0	
Towle's Chlorodyne Lozenges }	{ 0 7 1/2	0 5 3	
Ditto Jujubes }	{ 1 1 1/4	0 8 6	
Ditto in bulk, bottles free, containing 1 lb., 2/9 each.			
Ditto ditto 1 lb. 10 oz., 4/6 "			
Ditto ditto 4 lb., 10/- "			
N.B.—The Commissioners will allow them to be sold by the retailers without further duty, provided they are simply wrapped in paper, and not enclosed in a box, bottle, or packet.			
Thornton's Celebrated Toilet Cream	1 0	0 9 0	
Ditto	1 6	0 14 0	
Ditto	2 6	1 4 0	
Amboline (Registered Trade Mark)	2 6	1 4 0	
The Thornton (Red) Lotion (Stamped)	2 6	1 4 0	
Thornton's Faragon Hair Wash	1 0	0 9 0	
Ditto	2 6	1 4 0	
Posters, Bills, and Showcards on application.			

£5 worth (assorted or otherwise) Carriage Paid.
7 lb. Lozenges and upwards stamped with Chemists' own name, free of charge.

A. P. TOWLE & SON,

75 BACK PICCADILLY,
MANCHESTER, December, 1886.

"Instantaneous, Warm, and Soothing."

DR. LALOR'S PHOSPHODYNE



For TWENTY-FIVE YEARS has maintained its world-wide reputation as THE ONLY SAFE RELIABLE PHOSPHORIC REMEDY ever discovered for the Permanent Cure of Brain Wreckage, Paralysis, Sleeplessness, Harassing Dreams, Premature Decay of Vital Power, and all Functional and Disease Conditions of the System dependent upon the Deficiency of the Vital Forces. It Cures Dyspepsia, Nerve and Heart Diseases, Cures Kidney and Liver Complaints, Cures all Blood Disorders, Cures Consumption and General Debility, Checks all Wasting of the Vital Forces, from whatever cause arising.

THE EFFECT of this Standard Phosphoric Remedy in Nervous Debility and its Kindred Evils is Immediate and Permanent, all the Miserable Feelings and Distressing Symptoms disappearing with a rapidity that is REALLY MARVELLOUS.

DR. LALOR'S PHOSPHODYNE

HEALTH, STRENGTH, AND ENERGY.

Is the only Medicine of the kind or name awarded a Certificate of Merit at the Calcutta Exhibition, 1883-4, where all Countries were Exhibitors, and the only Trade Mark—"PHOSPHODYNE"—Registered and Protected under the Trade Marks Act.

THOUSANDS of unimpeachable Testimonials from all parts of the World, and from the highest Medical Authorities, prove conclusively the Verdict Universal that in the World of scientific research no other Phosphoric Preparation has received such exalted praise and distinguished recognition.

Full Printed Directions for the guidance of Patients in the Self-Treatment of the above Diseases are enclosed with each Bottle.

Sold in bottle at 4s. 6d. and 1s., by all Chemists throughout the World.

MANUFACTURED ONLY AT

DR. LALOR'S PHOSPHODYNE LABORATORY, HAMPSTEAD, LONDON, N.W.

SULPHATE OF QUININE

(GOLD AND SILVER BRAND)

QUININE FACTORY AUERBACH (DR. SEYFERTH).

Certified by Professor Fresenius, of Wiesbaden, as equal to the best preparations of other marks.

THE FACTORY SUPPLIED THE RUSSIAN, AUSTRIAN, and DUTCH GOVERNMENTS during last Season.

DEUTSCHE GOLD AND SILBER SCHEIDE ANSTALT

(VORMALS ROSSLER),

FRANKFORT - ON - MAINE

CYANIDE OF POTASSIUM,
IODIDE OF POTASSIUM,
BROMIDE OF POTASSIUM,
NITRATE OF SILVER,
CHLORIDE OF GOLD,
SULPHOCYANIDE OF BARIUM,

PHOTOGRAPHIC and PHARMACEUTICAL PURPOSES, of the Best Quality.

IRON Reduced by HYDROGEN,
TARTARIC ACID,
HYDROCHINON,
STRONTIA,
MAGNESIA, and ALL OTHER CHEMICALS for

Savaresse's Capsules.

SAVARESSE'S CAPSULES. SANDAL WOOD; COPAIBA.

Savaresse's Capsules of membrane each containing 15 drops Pure Maranham Copaiba Balsam, or, also of membrane, each containing 10 drops Pures Yellow Sandal Wood Oil. The efficacy of these valuable medicines is due to the absolute purity of the Balsam or Oil, and to the very gradual solvability of the membrane as compared with gelatine.

Copaiba, 2s. 6d., 18s. doz. Sandal 4s. 6d., 36s. doz.

CASCARA SAGRADA, HAWLEY (in Capsules).

The nauseous taste of this drug is effectually covered by enclosing a Concentrated Fluid Extract in Gelatine.

The boxes or bottles of 24 capsules, each containing equal to 30 drops of Fluid Extract.

Price—Boxes, 7/-; Bottles, 9/- per dozen.

EVANS, LESCHER & WEBB,
LONDON.

LIVERPOOL: MONTREAL: [F]
EVANS, SONS & CO. EVANS AND SONS (Lim.)

Savaresse's Capsules.

SAVARESSE'S CAPSULES. SANDAL WOOD; COPAIBA.

Savaresse's Capsules of membrane, each containing 15 drops Pure Maranham Copaiba Balsam, or, also of membrane, each containing 10 drops Pures Yellow Sandal Wood Oil. The efficacy of these valuable medicines is due to the absolute purity of the Balsam or Oil, and to the very gradual solvability of the membrane as compared with gelatine.

Copaiba, 2s. 6d., 18s. doz. Sandal, 4s. 6d., 36s. doz.

SAVARS CUBEB CIGARETTES.

SAVARS CUBEB CIGARETTES.

Cubeb, Stramonium, and Cannabis Ind. (soothing). Relief in Asthma, Throat-Cough, Bronchitis, Influenza. A specific against Fogs.

Boxes (12) 1s., 9s. per doz.; (36) 2s. 6d., 24s. per doz.
Full Directions.

EVANS, LESCHER & WEBB,
LONDON.

LIVERPOOL: MONTREAL: [A]
EVANS, SONS & CO. EVANS AND SONS (Lim.)

Sole Agents—OSCAR ANDREEAE & CO.

26 Great Tower Street, LONDON, E.C.

WITHOUT A RIVAL!

From the time Medicine was first discovered by the Ancients down to the present none ever made such progress as

BEECHAM'S PILLS.



They stand without a rival, and have by far the largest sale of any Patent Medicine in the World. This is a fact which every business man is bound to admit.

All Foreign Dealers will find BEECHAM'S PILLS the most Saleable Medicine in the Market.

The health-restoring and life-giving properties of these Pills are such as to increase their demand every year.

The words "BEECHAM'S PILLS, SAINT HELENS," are on the Government Stamp affixed to each box.

Prepared only and sold by the Proprietor, THOMAS BEECHAM, ST. HELENS, LANCASHIRE, ENGLAND, in boxes at 1s. 1½d. and 2s. 9d. each, with full instructions for use.

SULFONAL-RIEDEL.

SULFONAL-RIEDEL TABLETS.

Awarded a Gold Medal at the Brussels Exhibition.

PEPSIN-RIEDEL, P.B.&P.G.

Manufacturer: J. D. RIEDEL, BERLIN.

ACETIC ACID,

Chem. Pure, 30, 33 (P.B.), and up to 95 per cent., and
GLACIAL.

Manufactured by the LARGEST MAKERS

VEREIN FUR CHEMISCHE INDUSTRIE

(Union of Chemical Industries).

Head Office—FRANKFORT-ON-MAIN. 9 Factories.

IODOFORMIUM BITUMINATUM

(Dr. EHRENNAN).

IRON REDUCED BY HYDROGEN IN EVERY PERCENTAGE.

The Speciality of the "CHEMISCHE FABRIK"

OF
Dr. PAUL LOHMANN,
HAMMELN, HANOVER.

GLYCERINE, CHEM. PURE,
d. d. 1,260 S.G.
CARBONATE OF MAGNESIA AND
CALCINED MAGNESIA. Lightest and Puriss.

TO BE OBTAINED THROUGH WHOLESALE DRUGGISTS. SOLE WHOLESALE AGENTS:

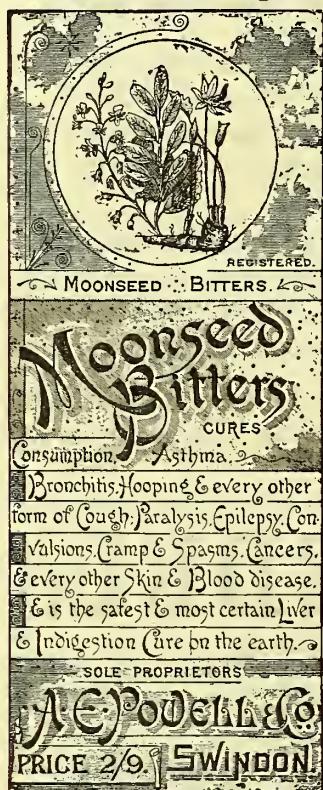
R. W. GREEFF & CO., 29 MINCING LANE, LONDON, E.C.

"CUTTING COUNTERACTED."

MOONSEED BITTERS brings FULL PRICES.

WHY?

Because every one who retails Moonseed Bitters has to sign an Agreement or Contract in the following terms:—



MOONSEED BITTERS.

Above is Facsimile of
THE WRAPPER LABEL
of the 2/9 size.

It is also sold at 4/6.

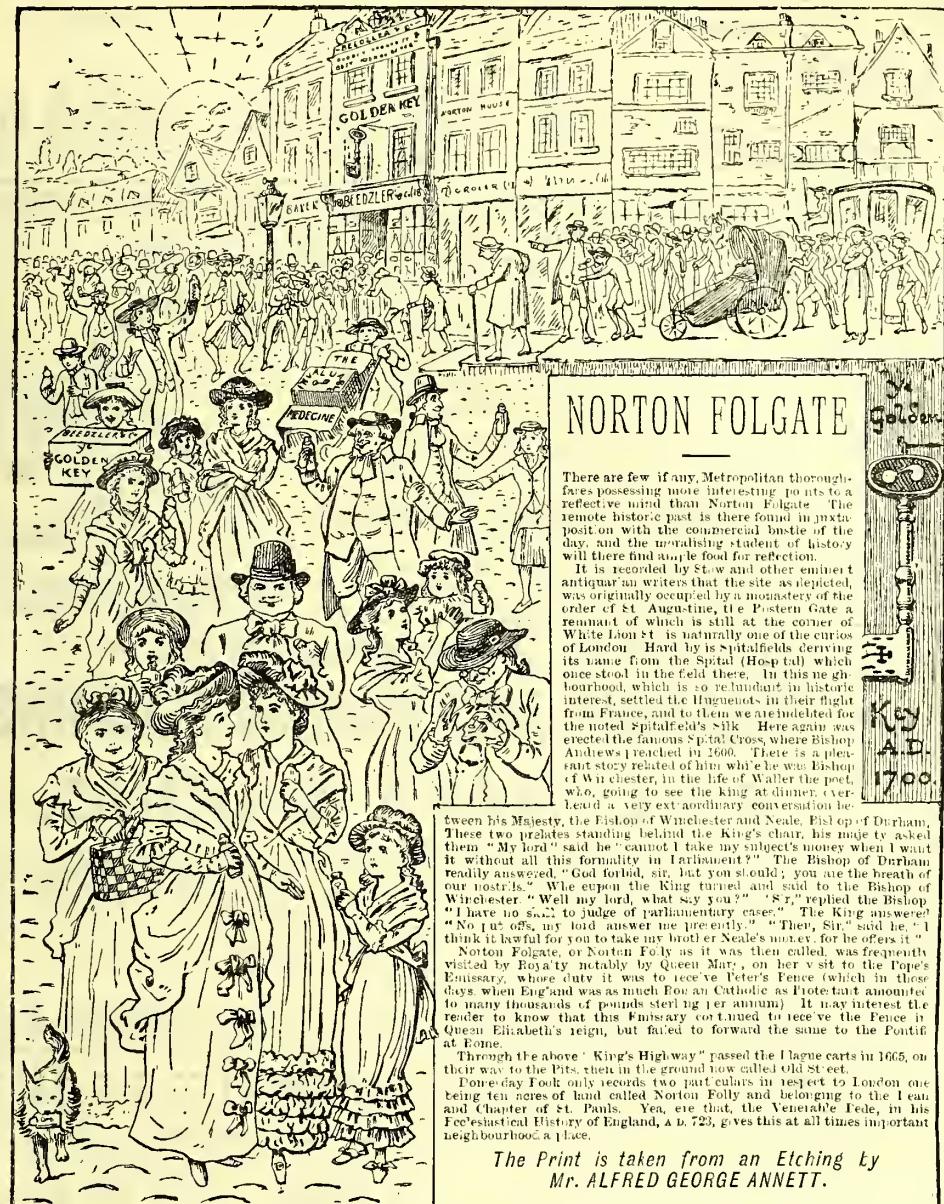
MOONSEED OINTMENT.

Retails at 1/1½, 2/9, 4/6 per box.

We call attention to the important steps which we have taken to prevent our specialities being retailed at less than the advertised prices, and we ask the co-operation of the Trade in maintaining the integrity of the scheme whereby the sale of our preparations may always be retained by the legitimate trade. We will not only endeavour, by all means in our power, to prevent the advertised prices being "Cut," but will give Chemists every assistance and facility for making this a large as well as a paying business.

Please write for Terms and Form of Agreement. NOTE that we allow retailers of Moonseed Bitters 2s. 6d. per thousand for the Distribution of Pamphlets.

A. E. POWELL & CO., SWINDON.



NORTON FOLGATE

There are few if any, Metropolitan thoroughfares possessing more interesting points to a reflective mind than Norton Folgate. The remote historic past is there found in juxtaposition with the commercial bustle of the day. The quiet scenes of history will there find ample food for reflection.

It is recorded by St. and other eminent antiquarian writers that the site as depicted, was originally occupied by a monastery of the order of St. Augustinian, the Postern Gate a remnant of which is still at the corner of White Lion st. It is naturally one of the curios of London. Hard by is Spitalfields deriving its name from the Spital (Hospit) which once stood in the field there. In this neighbourhood, which is so redundant in historic interest, settled the Huguenots in their flight from France, and to them we are indebted for the noted Spitalfields silk. Here again was erected the famous Spital Cross, where Bishop Andrews preached in 2600 sermons. It is a pleasant story related of this whilst the Bishop of Winchester, in the life of Walter the poet, who, according to the king at dinner, ever lead a very ext extraordinary conversation, he

the Bishop of Worcester and Neale, Bishop of Durham. These two prelates standing behind the King's chair, his majesty asked them "My lord" said he "cannot I take my subject's money when I want it without all this formality in Iuribantum?" The Bishop of Durham readily answered, "God forbid, sir, but you shoud; you are the breath of our nostrils." We upon the King turned and said to the Bishop of Winchester, "Well my lord, what say you?" "Sir," replied the Bishop, "I have no skill to judge of parliamentary cases." The King answe'red, "No prouf, my lord answer me presently." Then, Sir," said he, "I think it lawfull for you to take my brother Neale's money, for he offers it."

Norton Folgate, or Norton Folly as it was then called, was frequently visited by Royalty notably by Queen Mary, on her visit to the Pope's Embassy, whose duty it was to receive Peter's Pence (which in those days when England was as much Non Catholic as Protestant amounted to many thousands of pounds sterl (per annum). It may interest the reader to know that this Embassy continued to receive the Pence in Queen Elizabeth's reign, but failed to forward the same to the Pontiff at Rome.

Through the above "King's Highway" passed the plague carts in 1665, on their way to the pits, then in the ground now called Old Street.

One day Folly only records two particular events in respect to London one being ten acres of land called Norton Folly and belonging to the Dean and Chapter of St. Pauls. Yea, eve that, the Venerable Bede, in his Ecclesiastical History of England, A.D. 723, gives this at all times important neighbourhood a place.

The Print is taken from an Etching by Mr. ALFRED GEORGE ANNELL.

DYNAMITE SCARE AT ACTON.

Vide THE COUNTY OF MIDDLESEX INDEPENDENT, Nov. 8th.

ABOUT a week ago a plain deal box addressed to the "Inspector in charge" was duly delivered by the Parcels Delivery Company to Mr. Inspector Swords at the Acton Police Station. In these days of dynamite and such other pleasant novelties, the police have been taught to be cautious, and it was deemed prudent to keep the box unopened for two or three days whilst waiting instructions. However, it suddenly dawned upon the mind of one intelligent Officer that "murder was in the air," and that the opening of that box would lead on to discovery and — promotion. A Council of War was held, and it was decided that Inspector Swords should unravel the mystery by opening the box. The Inspector went cautiously but boldly to work, whilst the terror depicted on the faces of some of those present is described as being intense, but it was still more intense when the lid was fairly raised, and they beheld a number of those deadly weapons of destruction—cartridges. Down went the lid again with a bang, and a telegram was about to be

despatched to Scotland Yard, when the "happy thought" struck the inspector that cartridges are innocent things in themselves, and that even if clockwork or some other ingenious mechanism had been inserted in the box to cause an explosion, it had either run down, or had never been wound up, or they would all have been in eternity long ago. He once more raised the lid and proceeded to examine one of the supposed cartridges. The first wrapper was taken off. Silence reigned supreme, and the terror was deeply intensified. The second wrapper was unfolded. The terror was now extreme, as, exposed to view, they saw not a cartridge, but a bottle filled with a dark suspicious looking fluid, labelled with this inscription, "To be taken every two hours whilst the cough is troublesome." The agony ceased and hilarity prevailed. The murder was out. An enterprising Firm in Norton Folgate (J. Beedzler & Co.) have patented "ANNETT'S COUGH BALSAM," and the box contained a bottle of the Mixture for each officer attached to the Acton Station. We will only express the hope that the Mixture may effect as great relief when taken according to the directions to counteract the effects of the present foggy weather as was experienced by the whole of the men present when the contents of that box became known.

JOHN BEEDZLER & CO.
WHOLESALE AND RETAIL CHEMISTS,
18 NORTON FOLGATE, E.C.

(Opposite Worship Street, and near the Bishopsgate Low Level Station)



JOHNS'**LIVER
PILLS.**

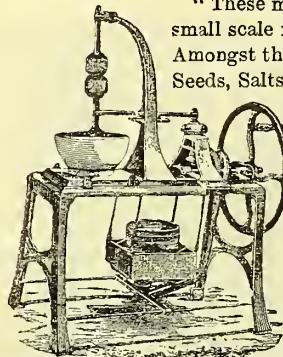
*Full
Directions
with each Box*

The Best and Safest Medicine for all Disorders of the Liver and Digestive Organs; also invaluable in all Female Complaints.

PREPARED AND SOLD BY

W. JOHNS, 6 Wilkes St., LONDON, E.

In Boxes 1s. 1½d. and 2s. 9d. each.

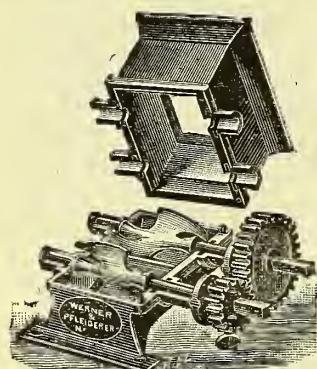
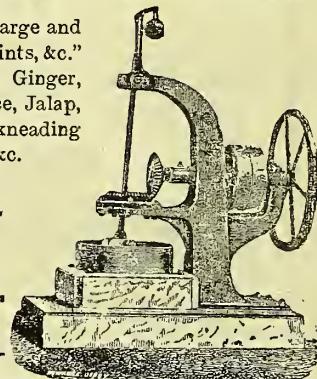
GOODALL'S PATENT GRINDING & LEVIGATING MACHINES.

ILLUSTRATED PRICE LIST, with full particulars, sent free.

Prices from £8 10s. to £60.

E. F. GOODALL, Duffield, near DERBY.

London Office and Show Rooms:
6 ELDON ST., LONDON, E.C.
Agent—Z. CARTWRIGHT.



Size 3, Type I, for 1-lb. Mass.

**THE "UNIVERSAL"
KNEADING AND MIXING MACHINE
FOR
PILL MASS MAKING,**

ALSO FOR
Horse Balls, Tooth Pastes, Ointments, Soaps, Powders, and for
general Mixing and Incorporating.

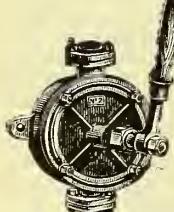
REPLACES WITH ADVANTAGE ALL OTHER APPLIANCES FOR THESE PURPOSES.

Made in various sizes, to do from $\frac{1}{2}$ lb. up to 1 ton at a time.**WERNER & PFLEIDERER, 86 Upper Ground St.,
Blackfriars Bridge, LONDON, S.E.****PONTIFEX & WOOD, LIM.**

SHOE LANE,

LONDON, E.C.

THE
**'FARRINGDON'
NEW PATENT
PUMPS.**



Made in various materials, suitable for Hot and Cold Liquor, Wines, Spirits, Oil, Vinegar, and Acids generally.

DAHL'S DYSPEPSIA CAKES,*As supplied to H.M. the Empress Eugenie.*

For Indigestion and Constipation, 1s. and 2s. 6d. per box.

DAHL'S POWDERED CAKES,

For Specially Delicate Cases, 2s. 6d. per box.

DAHL'S AGENCY—41 EASTCHEAP, E.C.

44

DISPENSING BOTTLES & PHIALS

WE NOW SUPPLY OUR CELEBRATED

6 and 8 oz. Bottles at 7/6 per gross.

3 , , 4 oz. ditto 6/6 , ,

All other Sizes and Kinds equally low.

I. ISAACS & CO.

GLASS BOTTLE MANUFACTURERS,

25 Francis St., Tottenham Court Road, London, W.C.

*Established upwards of 50 years. Bankers: London and Westminster Bank.***SPONGE IMPORTERS.****M. PETERSON & CO.**

(ESTABLISHED 1870),

75 ST. ANNE STREET, LIVERPOOL.

FOR HOME, FOREIGN, & COLONIAL MARKETS.

TRADE PRICES.

SEND FOR OUR LISTS.

PRICE LISTS UPON APPLICATION.

GLASS BOTTLES

FOR
DISPENSING.

PATENT MEDICINE PROPRIETORS.

PERFUMERY FACTORS. AERATED WATER MAKERS.

SYRUP, CORDIAL, AND LIQUEUR BOTTLERS.

HONEY, JAM, AND PRESERVE BOTTLERS.

SOLE MAKERS.

THE "INTERNATIONAL" FEEDING BOTTLES*Constantly Increasing Sales. Cheapest and Best Series to Adopt.*

SEND FOR SPECIAL TRADE LIST.


SHOP ROUNDS

WITH OR WITHOUT LETTERING, LABELS, ETC.

SHOW CARBOYS, JARS AND POTS.

GROUND-GLASS STOPPED BOTTLES.

EVERY CLASS AND DESCRIPTION.

OPAL POTS, JARS, AND BOTTLES.

GREAT VARIETY. NEW PATTERNS.

PRICE LISTS UPON APPLICATION.

BREFFITS'

(LIMITED)

AIRE AND CALDER BOTTLE CO.

83 UPPER THAMES ST., LONDON.

DISINFECTION BY FUMIGATION.



To meet the growing demands for convenient methods of disinfecting apartments, clothing, &c., by sulphur fumes,

NOTHING EVER DEVISED EQUALS SEABURY'S SULPHUR CANDLES

(PATENTED 6407).

Will destroy disease germs after infectious diseases, in vacated apartments or hospital wards, also bedding, clothing, and drapery.

Will destroy noxious vapours from sewers, cesspools, &c.

Will destroy insect pests, and other vermin.

These candles afford the only safe means of burning sulphur indoors, on board ship, &c., and are used and approved by Boards of Health in various parts of Great Britain and America.

One candle will burn for two hours, and thoroughly disinfect a room of ordinary size. ONE SHILLING EACH.

For Mild Disinfection or Deodorisation use

SEABURY'S "HYDRONAPHTHOL" PASTILLES.

(TRADE MARK.)

These Pastilles are a combination of "Hydronaphthol" with fragrant gums and perfectly harmless materials to promote combustion. Each Pastille will burn for about thirty minutes, and will not only deodorise the room in which it is burned, but will drive out flies and other insect pests. The Hydronaphthol is volatilised by the heat and recrystallises in air, being deposited on walls and draperies, whence it is subsequently taken up by the humidity of the atmosphere, thus furnishing lasting sources of disinfection. Twelve pastilles in a decorated tin box. ONE SHILLING PER BOX

Manufactured by **SEABURY PHARMACAL LABORATORIES**, New York.

SEABURY & JOHNSON,
NEW YORK.

Manufacturing
Chemists,
MONTREAL.

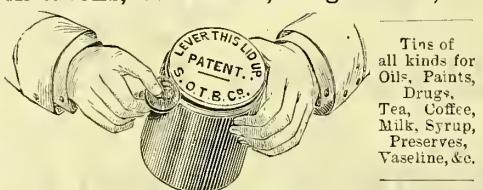
46 JEWIN STREET, LONDON, E.C.
HAMBURG.

THE SELF-OPENING TIN BOX CO.

(Griffin's Patent's)

Albion Tin Works, York Road, King's Cross, N.

The largest
Tin Box
Works in the
Kingdom.
Ten Prize
Medals
have been
awarded.



Tins of
all kinds for
Oils, Paints,
Drugs,
Tea, Coffee,
Milk, Syrup,
Preserves,
Vaseline, &c.

Persons requiring Self opening Tin Boxes are invited to apply for Press Notes and the opinion of the celebrated Patent Counsel, Mr. Theodore Aston, Q.C., as to the merits of the invention of Self-opening Tin Boxes.

From these they will see the scandalous manner in which the Inventor has been treated, rendering the word "Justice" a mockery. It is hoped that all lovers of fair play and honourable dealing will remember this when giving their orders.

MEAD'S ADHESIVE PLASTER

To supply the demand for a cheap but pliable adhesive Plaster, this article is commended as superior to all other goods of its class on the market.

Cotton Cloth, 7 in. wide	..	..	..	14/- per dozen yard rolls.
" 12 "	..	..	..	5/- per 5-yard roll.
On 10-yard spools.	1/2	1/4	1	1 1/4 2 2 1/4 3 in. wide.
Mead's Rubber Corn Plasters ..	..	..	..	8/- "
" Bunions ..	..	..	..	8/- "

Applied without heat or moisture, relieve and reduce almost instantly all soreness, pain, or inflammation.

Sole Manufacturers—

[3]

SEABURY & JOHNSON,
46 JEWIN STREET, LONDON, E.C.
NEW YORK. MONTREAL. HAMBURG.

46

COLTHURST & HARDING,

BRISTOL—Manufacturers: Phoenix Wharf and Temple Gate. Offices: Temple Gate. Telegrams: "Phoenix Bristol."

LONDON—Manufacturers: Alpha Works, Millwall E. City Office: 16 Fish Street Hill, E.C. Telegrams: "Alpha Brand London."

HARD LUSTROUS ENAMEL,
IN ALL THE ART SHADES.

For all kinds of decoration on Wood or Iron. Dry with a surface like Porcelain. Sold in small or large Tins, or in bulk. Prices and shades on application.

**WHITE LEAD, ZINC WHITE,
PAINTS & COLOURS** OF ALL
KINDS.
MIXED PAINTS READY FOR USE,

In Tins, 1, 2, 4, 7, and 14 lbs. each.

HIGH-CLASS VARNISHES
Of all kinds, for Coachbuilders, Decorators, &c.

OIL BOILERS, REFINERS, & MERCHANTS
Export Orders received, special and in ompt attention.

BALL DENOTES
COLOUR OF PAINT.



CHEMISTS' SHOPS, to be attractive and healthy, should be well lighted and ventilated.

The Wenham Gas Lamp has now been perfected for INSIDE and OUTSIDE Shop Lighting, ensuring a pure, brilliant, economic light.

Write for a descriptive Catalogue to

THE WENHAM COMPANY (LIMITED),
Upper Ogle Street, Fitzroy Square, London, W.

Clarke's Newly Designed "Pyramid" Nursery Lamp Food Warmer, with New Registered Panakin.



N.B.—NO ALTERATION IN THE PRICE OF THE OLD PATTERN "PYRAMID" FOOD WARMER.

CLARKE'S IMPROVED PANAKINS (REGISTERED) FOR USE WITH CLARKE'S "PYRAMID" NURSERY LAMP.

By this invention any liquid food can be poured out, or drunk, w^{thout} scum or grease passing through the spout, and events spilling when poured into a Feeding Bottle, so objectionable with all other Panakins.

These Panakins will fit all the old "Pyramid" Nursery Lamps, and can be purchased separately.

WHOLESALE PRICES { No. 1 " 80 per dozen.
LAMPS COMPLETE { " 2 " 33 " } Cash discount, 5 per cent.

N.B.—Extras.—Porcelain Panakins per dozen, No. 1 " 6/- Lids " 2/-
" " " 8/- " 2/-
" " " 3 " 9/- " 3/-

Tin Panakins, No. 1, 8/- No. 2, 10/- No. 3, 12/-

Clear Glasses 14/- Roughed, 6/- Opaline, 6/- Ruby, 8/-

B.—Ask for CLARKE'S PANAKIN, and see that his name and the registered number

(Registered 91,241) is on the Panakin, and trade mark "PYRAMID."

Clarke's Patent "PYRAMID" NIGHT LIGHTS are the only Lights suitable for these Lamps.

Sold Retail by all respectable dealers, and Wholesale by the Patentee, S. CLARKE,

"PYRAMID" AND "FAIRY" LIGHT WORKS, CRICKLEWOOD, LONDON, N.W.

London Show Room—31 ELY PLACE, HOLBORN CIRCUS, E.C.

LARKE'S ADJUSTABLE BED-TRAY (COUSINS') (PATENT)

FOR INFANTS AND INVALIDS,

For use with CLARKE'S "PYRAMID" NURSERY LAMP FOOD WARMER,
with h's NEW REGISTERED PANAKIN.

This is an invaluable Invention, and useful appliance at the bed-side, suitable for Invalids, particularly for Parents whose Infants require Feeding during the night. It obviates necessity of getting out of bed, as everything required for use can be put on the TRAY. The TRAY is adapted for use in connection with Clarke's "Pyramid" Food Warmer, and when required can be turned to the wall in such a manner as to Shade the Person in bed from the Rays of the Light.

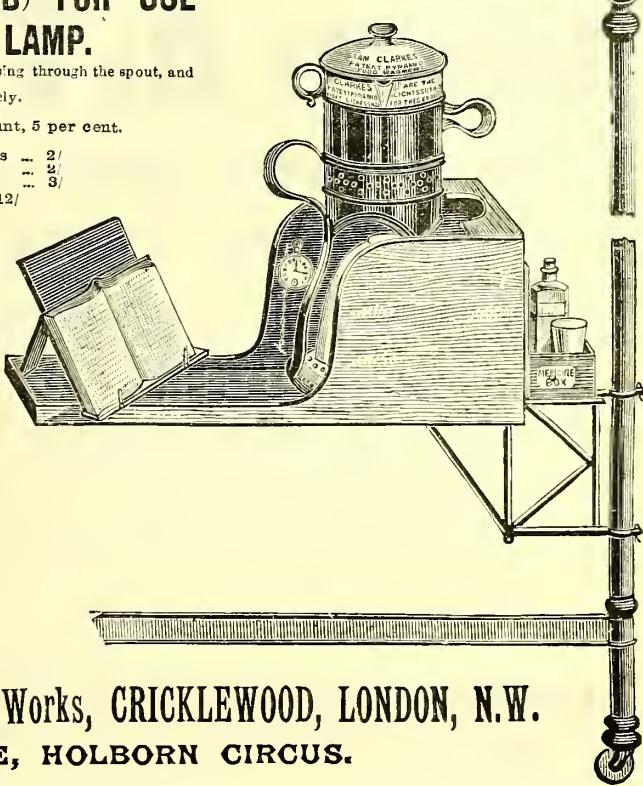
Infants will find a Great Comfort, for any book, plate, basin, &c., can be placed thereon for use, and obtained without altering the position in bed. By means of a Slide, the TRAY can be pulled forward to the position or length required. It is Highly recommended by Medical Profession, and can be obtained from most dealers in Clarke's "Pyramid" & "Fairy" Lamps.

ay, 15/- with Book Rest & Medicine Box, 21/-, less 33½ per cent.

Food Warmer, see above.

With Brass Bracket, 4s. extra. Adjustable Brass Support for book rest, 5s. extra

INSTRUCTIONS FOR FIXING. Place the Clips round the bed-post, insert the Thumbscrew in the square hole at the end of same, and screw as tightly as possible. The Clips being of spring steel, they will fit any size post. A little cloth or washleather should be placed round the bed-post to prevent scratching the post.



S. CLARKE, "Pyramid" and "Fairy" Light Works, CRICKLEWOOD, LONDON, N.W.

SHOW ROOMS—31 ELY PLACE, HOLBORN CIRCUS.

S.V.R.

PURE GRAIN SPIRIT 56 O.P., B.P., 18/5, used by the principal Wholesale Druggists.

Do. Do. DOUBLE DISTILLED 18/9

Cash with Order. Reductions for Quantities.

SAMPLES FREE.

STEPHEN SMITH & CO., BOW, LONDON, E.

S.V.R.

SPECIALITY FOR PERFUMERY.

This pure grain spirit, which has been thrice rectified and filtered through charcoal, is being largely used in making high-class Perfumes.

Price, 19/-, 56 o.p.; 19/6, 60 o.p. Cash with order.

Reductions for Quantities.

STEPHEN SMITH & CO., BOW, LONDON, E.

PURE RECTIFIED SPIRITS OF WINE

(DOUBLE DISTILLED).

56 o.p. 18/9; 60 o.p. 19/3 per gallon. CASH WITH ORDER.

SPECIAL QUOTATIONS FOR QUANTITY, AND FOR EXPORT IN BOND. METHYLATED SPIRIT.

JAMES LESLIE & CO., DISTILLERS, BELFAST.

PURE SPIRITS OF WINE.

(STEAM STILLS
ONLY.)

60 o.p., 18/9 per gall.; 56 o.p., 18/3 per gall.

(SPECIAL QUOTATIONS
TO LARGE CONSUMERS)

CASH WITH ORDER.

GEORGE PHILLIPS & CO., ST. ANDREW'S DISTILLERY,
CLERKENWELL ROAD, LONDON, E.C.

JAMES BURROUGH, **S.V.R.**

CALE ST., CHELSEA, S.W.

and Methylated Spirit

AT LOWEST PRICES.

WRITE FOR QUOTATIONS.

GENUINE EMERY, EMERY CLOTH, AND BLACK LEAD.

JOHN OKEY & SONS,

MANUFACTURERS OF

Glass Paper, Emery and Glass Cloth; Emery, Black Lead, Emery Wheels, Pumice, Putty Powder, Crocus, Urn Powder, Tripoli, Rouge, Plate Powder, Steel Polish, Furniture Polish, Knife Boards, Brunswick and Berlin Black, &c.

OKEY'S WELLINGTON KNIFE POLISH,

Prepared expressly for Okey's Patent Rubber Knife Boards, Buff Leather Boards, and all the Patent Knife Cleaning Machines. Sold in Canisters with perforated Tops to prevent waste, at 1d., 2d., 3d., 6d., 1s., 2s. 6d., and 4s. each.

OKEY'S NON-MERCURIAL SILVERSMITH'S SOAP,
For Cleaning and Polishing Silver, Plate Glass, Marble, &c. Tablets, 6d. each.

OKEY'S "POLYBRILLIANT" (Registered).

▲ Magic Pomade for Cleaning Brass, Copper Tin, Pewter, Britannia Metal, &c. Never becomes dry and hard like other Metal Pastes. Tins 1d., 2d., 3d., and 6d. each.

WELLINGTON BLOCK BLACK LEAD,

In 1d., 2d., and 4d. Blocks, and 1s. Boxes.

WELLINGTON EMERY & BLACK LEAD MILLS, Westminster Bridge Road, London, S.E.

Highest award and Prize Medal, Philadelphia Exhibition, 1876; and Boston, 1888. Gold Medal, Crystal Palace, 1884

ANGLO-AMERICAN OIL COMPANY, LIM.

LONDON.

HULL.

GREAT YARMOUTH.

LIVERPOOL.

NEWCASTLE.

LYNN.

BRISTOL.

SOUTH SHIELDS.

STOCKTON.

HEAD OFFICES—16 ST. HELENS PLACE, BISHOPSGATE ST., LONDON, E.C.

American Refined Petroleum.

The long established superiority of "**Tea Rose**," "**Royal Daylight**," "**White Rose**," and "**Westminster**" American Petroleum Oils, manufactured by the Standard Oil Company of the United States, is well known to the Trade and to Consumers, and no Oils are so widely and justly celebrated. Their superior burning qualities, freedom from odour and from any tendency to smoke, and their general excellence, have placed them above comparison with any and all other brands.

In order to meet the largely increasing demand for these oils, and the better to supply the Trade generally, we have arranged to import them from the United States in bulk as well as in barrels. We shall fill the Oil which we import in bulk into barrels at our own wharves, and as our cooperage facilities are modelled upon the best American methods, buyers will receive the Oil in tight and clean packages.

Our Tank Steamers, "**Manhattan**" and "**Bayonne**," in their construction, arrangements, power and size, are in advance of any tank steamers afloat, and each has a carrying capacity of 4,000 tons, equivalent to 28,000 barrels of Oil by each steamer.

We shall keep large stocks of these Oils constantly on hand at all our Importing Centres and Depôts, and in this manner be able to supply the Trade promptly. Being the representatives in the United Kingdom of the Standard Oil Company, of America, we are in the best possible position for supplying the trade on the most favourable terms.

To cover the special requirements of London buyers, we have completed the construction of a large Storage Wharf at Purfleet, which will be worked in connection with our Depôts at—

AILSA STREET, BOW CREEK, E.

CANAL WHARF, CHALK FARM ROAD, N.W.

ALBANY WHARF, ALBANY ROAD, CAMBERWELL, S.E.

CARBOLIC POWDER, £4 TON.

1-ton lots and upwards.

CARBOLIC PINK POWDER, 5/-, 7/6, and 10/- per cwt., in bags or casks.**WHITE CARBOLIC POWDER**, 10 %, 15 %, and 20 %, equally cheap.**HANDSOME LARGE DECORATED BLACK AND GOLD TIN BOXES.**Holding 1½ lb. (usual 1/- size), 4/6 doz. Ditto, **LARGE SIZE** (usual 1/6 size), holding about double quantity, 6/- doz.**PALE CARBOLIC ACID**, 99 per cent. (No. 5), and **CHLORIDE OF LIME** below market prices
CRUDE CARBOLIC ACID (Brown), 1/-, and 1/6 Gallon; also in patent stoppered bottles, labelled.**SANITARY FLUID** or **CREOSOL** (to be used with 100 parts of water, making a *milky fluid*), half usual prices.
All goods delivered free in London or suburbs, or to rail or docks. THE CHEAPEST HOUSE IN THE TRADE.**HAMILTON & CO., HIGH STREET, WANDSWORTH, LONDON, S.W.**

SANITARY FLUID & SHEEP DIP (SOLUBLE) (CREOSOTE.)

Registered Trade Mark "PIONEER BRAND."

The Best and Cheapest Disinfectant and Cleanser. Easily Used. Perfectly Safe.
Absolutely Non-Poisonous, except to Insects and Parasites.Used for all Sanitary Purposes in Households, Stables, Kennels, &c.
A Perfect Dog Wash and Sheep Dip.Free from any Objectionable Smell, and does not leave any Stain.
Invaluable for Destroying Insects of all kinds on Plants and Fruit Trees, and
Fungus and Moss in Greenhouses or Frames.One gallon mixed with 100 gallons Water makes a Strong Disinfectant. When added to the water it gives it the
appearance of Milk.

AGENTS WANTED. SAMPLE AND PRICES ON APPLICATION.

GRINDLEY & CO., POPLAR, LONDON, E.

DAY & SONS' WORLD-FAMED HORSE & CATTLE MEDICINES.



PRICE—10/- PER HALF-DOZEN, OR 19/- PER DOZEN.



FOR Fevers, Yellows, Indigestion, and Dulness
FOR Bed Water, Costiveness, and Mawbound.
FOR Disordered System in Cattle.
FOR Bad Cleansing after Calving.
FOR Preventing Milk Fever and Inflammation.
FOR Purifying and Increasing the Milk.
PRICE—12/- PER DOZEN PACKETS.



PRICE—2/6 PER BOTTLE.



FOR ALL DISORDERS OF HORSES, CATTLE,
CALVES, SHEEP, AND LAMBS.
PRICE—3/6, 7/-, 14/-, AND 21/- IN CANISTERS.

THE "ORIGINAL" UNIVERSAL MEDICINE CHESTS, £2 4s. and £5.

FOR ALL DISORDERS OF HORSES, CATTLE,

Only Prepared by the Inventors, DAY & SONS, CREWE, CHESHIRE.

May be obtained of Sanger & Sons; Evans, Lescher & Webb; Barclay & Sons; Burgoyne, Burbridge & Co., &c., London; Evans, Sons & Co., Liverpool, &c. Exporters are invited to apply for terms. Liberal Discount offered.

FOR ALL CANINE AILMENTS.

SPRATTS PATENT, LIMITED,

DOG MEDICINES.

Pamphlets on Canine Diseases for gratuitous distribution. Show Cards and Handbills Supplied.

Address : SPRATTS PATENT, LIMITED, LONDON, S.E.
SPRATTS PATENT (AMERICA) LIMITED, 239 to 245 East 56th Street, NEW YORK, U.S.A.
OR YOUR WHOLESALE HOUSE.

ANILINE DYES

TO SUIT ALL TRADES.

BEST SPIRIT BLACK
IN THE MARKET.

Mahogany Stain
Ebony Stain
Oak Stain
Walnut
Stain

PRONK, DAVIS & CO.

3 TRINITY PLACE,
TOWER HILL, LONDON, E.C.

COLOURS.

CHEMICALS.
INDIGO PASTE.

CUDBEAR.

DYEWOOD EXTRACTS.

BRONZE POWDERS AND METAL LEAF.



Used on the Royal Farms at Windsor, Osborne, and Sandringham, and by
the principal Stockbreeders everywhere for nearly 60 years.



DAY, SON & HEWITT'S HORSE, CATTLE, AND SHEEP MEDICINES.

THE CHEMICAL EXTRACT.

For assuaging pain and inflammation in all wounds, saddle galls, strains, bruises, swellings and relaxed tendons in Horses. For paining after calving and lambing, and for swollen udders and sore feet.

2s. 6d. per Bottle; ½-dozen Box, 7s. 6d.

THE RED DRENCH.

Celebrated for inflammatory disorders, such as fevers, pleurisy, foot-and-mouth complaints, yellows, surfeit, and red-water. Also for difficult calving and lambing. Admirably adapted for cleansing and checking feverish symptoms in Cows and Ewes after a bad time of parturition.

For Sheep, 3s. 6d.; for Cattle, 13s. per dozen Box.

THE GASEOUS FLUID.

Unmatched for colic or gripes and debility in Horses, for colds, chills, shivering fits, flux and diarrhoea in Cattle, Calves, and Sheep. For Ewes weakly after lambing and blown Cattle and Sheep, its effects are marvellous.

20s. per dozen Box.

THE GASEODYNE.

Used as laudanum in uncontrollable spasmodic pains and violent bowel complaints. Invaluable for parturition in Mares, Cows, and Ewes.

3s. 6d. per Bottle; ½-dozen Box, 10s. 6d.

THE RED PASTE BALLS and RED POWDERS.

For ill-conditioned Horses and Foals; invaluable after hard hunting, driving. For coughs, colds, starting coat, itching, swollen legs and want of strength. The powder given in the feed will produce fine appetite and tone.

7s. 6d. per dozen; 3-dozen Box, 21s.

THE BLACK PHYSIC BALLS.

These Balls are matchless for thoroughly cleansing the system of all impurities, and for assisting in the expulsion of Worms. Their purgative action soon relieves Costiveness of the Bowels, and checks all Feverish Symptoms arising from gross habit.

Price, 8s. per dozen; Box containing 3 dozen, 23s.

THE BRONCHOLINE.

The great and reliable remedy for Husk or Hoose in Cattle, Heifers Calves, and Sheep. Its gaseous odour destroys the worm or parasite in the windpipe, removes the hard cough, and soothes the lungs and other organs.

2s. 6d. per Bottle; ½-dozen Box, 7s. 6d.

THE "KEY TO FARRIERY."

A small work published by us on the general ailments of stock, their treatment and cure.

Large Edition, in Cloth, 2s. 6d.; Small Edition, 1s.

The Stockbreeder's Medicine Chest. No. 1 contains a complete assortment of all our preparations for treating diseases of stock generally. £6 6s 0d
The Stockbreeder's Medicine Chest. No. 2 is suitable for ordinary Farm use, and contains a useful selection of the above Medicines .. 2 lt 6
The Horsekeeper's Medicine Chest. No. 3 is arranged for large Horse Owners, Collieries, &c., and contains 12 specially selected Medicines 5 5 0
The Horsekeeper's Medicine Chest. No. 4 contains a smaller assortment, but has everything requisite for all ordinary ailments in Horses 2 17 6

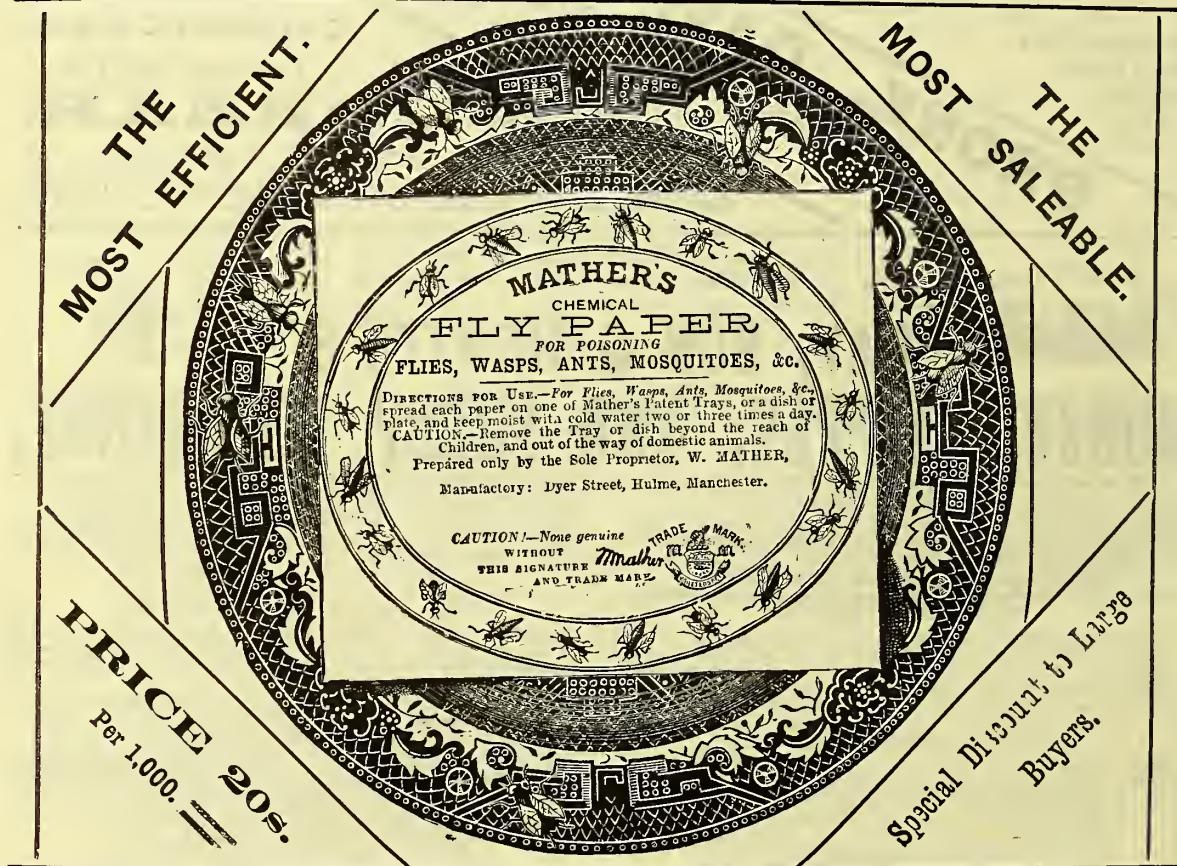
Prepared only by DAY, SON & HEWITT, 22 DORSET STREET, LONDON, W.
LIBERAL DISCOUNT TO FOREIGN BUYERS.

LIST AND PARTICULARS OF AGENTS ON APPLICATION.

WILLIAM MATHER'S SPECIALTIES.

MATHER'S Nigrine, a Jet Black Marking Fluid.
 MATHER'S Fuller's Earth.
 MATHER'S Goldbeater's Skin.
 MATHER'S Perfumes.
 MATHER'S Cachou Lozenges.
 MATHER'S "Prince of Wales" Floats and Lights.
 MATHER'S Chemical Fly Paper.
 MATHER'S Infant Feeding Bottles.

MATHER'S Nipple Shields.
 MATHER'S Violet Powder.
 MATHER'S Camphor Rolls.
 MATHER'S Chlorodyne Lozenges.
 Porous Plasters.
 Royal Balsamic Plasters.
 Porous Belladonna Plasters.
 Corn Plasters.
 Court Plasters.
 Mustard Plasters.



WILLIAM MATHER,
 DYER STREET, HULME, MANCHESTER.

LONDON WHOLESALE AND EXPORT AGENTS:—

MESSRS. MACE & HALDANE, 94 Milton Street, London, E.C.

FACTS SPEAK FOR THEMSELVES!

Results of a voting recently held in the pages of the *British and Colonial Druggist*, as to the most popular makers of the various articles sold by Chemists, reveal the following indisputable facts under the heading of **Menthol Cones**:—

Votes for—

Hockin, Wilson & Co.	65
Christy & Co.	63
Maw	28
Castle Brand	5
<hr/>	
161	

Votes for—

Shirley's

A1 Brand 644

So that out of 805 votes, **SHIRLEY'S BRAND** obtained **80 per cent.**, whereas all other brands put together obtained but 20 per cent., or comparing each brand separately,

SHIRLEY'S obtained—

Nearly 10 times as many votes as Hockin, Wilson & Co.'s.
Over 10 " " " Christy & Co.'s.
" 23 " " " Maw's.
" 123 " " " Castle Brand.

THE REASON IS SIMPLE.

Every endeavour has always been made to assist the retailer in selling

SHIRLEY'S A1 BRAND MENTHOL CONES,

By giving away Show Cases, Dummy Cones, Handbills, &c., the latest in this way being "**THE LITTLE CRIER.**"



This E'legant Biscuit-China Figure, an Ornament to any Shop,

GIVEN AWAY

To Purchasers of 25/- worth of

SHIRLEY'S A1 BRAND MENTHOL,

Or two if 40/- Order is Placed.

The following special parcels have been arranged to suit all classes of trade:—

Parcel 1, 25/- 4 doz. 2d., 1 doz. 3d., 2 doz. 3½d., 3 doz. 4d., 2 doz. 6d.	Parcel 15 40/- 4 doz. 2d., 2 doz. 3d., 3 doz. 3½d., 5 doz. 4d., 4 doz. 6d.
Parcel 2, 25/- 4 doz. 6d., 3 doz. 4d., 1 doz. 1s.	Parcel 8, 40/- 5 doz. 6d., 3 doz. 4d., 2½ doz. 1s.
Parcel 3, 25/- 3 doz. 3d., 2 doz. 1s., 1 doz. 4d.	Parcel 17, 40/- 4 doz. 6d., 4 doz. 4d., 1 doz. 9d., 2 doz. 1s.
Parcel 4, 25/- 1 doz. 9d., 2½ doz. 1s., ½ doz. 1s. 6d.	Parcel 8, 40/- 4 doz. 1s., 2 doz. 9d., ½ doz. 1s. 6d.

By calculating what each of the parcels would realise when sold, it will be found that they yield an average profit of 50 per cent. to the retailer on his outlay.

1d., 2d. and 3d. **MENTHOL CONES** for those who are obliged to sell cheap shapes.

No. 110v. 1d. Vase shape, 3 doz. on a card. 7/6 gross.	No. 114. 2d. Varnished Pedestal shape, 3 doz. on card. 16/ gross.	No. 115. 3d. Varnished Draughtsman, 2 d. 1/2 gross.
--	---	---

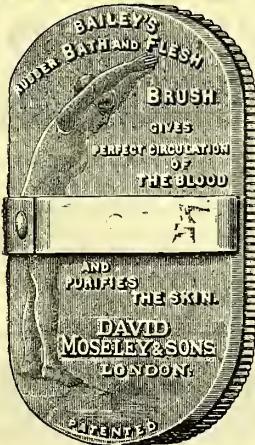
A1 COCAINE MENTHOL TOOTHACHE TUBE.

Sells splendidly; 12 on a card, 3/6 dozen.

SHIRLEY'S**20/ CASE OF SMELLING BOTTLES.**

Order one of these cases and you will not regret it. The case is lined with maroon velvet, and has a mirror back. The goods can be got at from the counter, as the case opens from the back. You can rely on a good assortment of bottles being sent you.

ARTHUR W. SHIRLEY, 30 PATERNOSTER SQ., LONDON, E.C.,
And 11, 12, and 13 ROSE STREET, NEW GATE STREET.

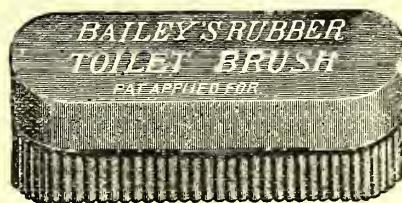
BAILEY'S RUBBER BRUSHES.

Our Bath and Flesh Brushes have been so well received by the trade, and have met with such ready sale, that it is unnecessary for us to say anything in praise of them here. We shall continue to make them of the very best quality of rubber obtainable, and, as we are advertising them largely, we have every confidence that they will continue to sell well.

PRICE

(in neat metal cases and with wood handles),

£2 2s. per dozen.

CLEAN HANDS.

Nothing has ever been invented that will so thoroughly cleanse and whiten the hands as our rubber brushes. Used with soap and water they will remove all kinds of stains without injuring the most delicate skin. They are made of the best Pará Rubber, and will last for years.

Price 1s., 2s., and 2s. 2d. each retail, or 8s., 17s., and 18s. per dozen.

BAILEY'S RUBBER
TOOTH BRUSH.

We are just now introducing our tooth brushes. They are made in two sizes, of the best rubber, and are certain to give satisfaction. For cleaning artificial teeth they have no equal. Our prices are 6s. and 6s. 6d. per dozen. Samples at the dozen prices will be sent to any chemist who may wish to see what the goods are like. The brushes will speak for themselves.

PRICE LISTS, AIR GOODS, WATER BOTTLES, SPONGE BAGS, ELASTIC BANDAGES, &c., UPON APPLICATION.

DAVID MOSELEY & SONS, MANUFACTURERS, { 14 Aldermanbury Ave., LONDON, E.C.; Ardwick, MANCHESTER
57 Miller Street, GLASGOW; BRUSSELS and PARIS.

A LOVELY BATH and TOILET WATER*Obtained by using PASTA MACK.*

GOLD MEDAL, Hygienic Exhibition, Octend, 1888



The Queen says:—"Pasta Mack is made in small tablets, which are pleasantly scented, and when placed in water soon dissolve, and impart a violet-like perfume to the water and the atmosphere." Sole Manufacturer and Inventor, H. MACK, U.M&D. Export from all wholesale houses. Wholesale Agents, OSBORNE, GARRETT & CO., London, W.

This entirely new and Unrivalled Health-giving preparation SOFTENS the WATER instantly imparts A MOST DELICIOUS ODOR, and Beautifies the Complexion in an extraordinary way. See the Trade Mark on every box.

S. MAW, SON & THOMPSON'S
WHITE ROSE TOOTH PASTE.

WARRANTED TO KEEP IN ANY CLIMATE.

In Square Earthenware Boxes, Gilt Burnt-in Labels, 12s. per dozen.

S. MAW, SON & THOMPSON'S
CHERRY TOOTH PASTE,

WARRANTED TO KEEP IN ANY CLIMATE.

In Round Earthenware Boxes, Burnt-in Labels, 3s. 9d. and 7s. 0d. per dozen.

S. MAW, SON & THOMPSON'S
AROMATIC TOOTH PASTE.

WARRANTED TO KEEP IN ANY CLIMATE.

In Square Earthenware Boxes, Burnt-in Labels, 10s. 6d. per dozen.

S. MAW, SON & THOMPSON'S
ARECA TOOTH PASTE.

WARRANTED TO KEEP IN ANY CLIMATE.

In Round Earthenware Boxes, Burnt-in Labels, 3s. 9d. and 7s. 0d. per dozen.

S. MAW, SON & THOMPSON'S
CAMPHORATED TOOTH PASTE

WARRANTED TO KEEP IN ANY CLIMATE.

In Round Earthenware Boxes, Burnt-in Labels, 3s. 6d. and 6s. 6d. per dozen.

S. MAW, SON & THOMPSON, LONDON.

HORN & SON.
OFFICES FOR BRITISH AND FOREIGN
PATENTS AND TRADE MARKS,
SOMERSET CHAMBERS, 151 STRAND, LONDON
(NEXT TO SOMERSET HOUSE).
Guide to New Patent Law and Registration gratis.

EMP. CERAT. SAPONIS.
ON FINE SHIRTING, 16 IN. WIDE.
6s. per Dozen net cash.

JOHN QUILLIAM & CO., Plaster Works, Manchester.
Cowburn Street, [D]

Chemical Apparatus and Chemicals.
SPECIALITY: BALANCES & WEIGHTS.
PRICE LISTS ON APPLICATION.
F. E. BECKER & CO.
LABORATORY FURNISHERS,
33, 35 & 37 HATTON WALL, HATTON GARDEN, LONDON, E.C.

THE MANCHESTER MAKERS OF
METH. SPIRIT Established 1840.
AND FINISH.
J. & D. MACNAIR & CO., IMPORTERS OF
29 Robert St., Bridgeton, MANCHESTER, GLASGOW.
Send for prices and samples.
SHELLAC, GUMS, ETC.

CRITCHLEY'S STARCH GLOSS
Makes Starched Linen like new. Does not stick to spider-like Materials. Once tried always wanted. Used in the Royal Laundries. Sold everywhere, in 1 lb. & 1/2 lb. boxes, 1d., 1d., 8d. and 1s. each. Write for quotations.
Sample six stamps. Special quotations to large buyers.

ORANGE WINE
(VIN. AURANT., P.B.)
Specially brewed for Quinine Wine, does not deposit. Well adapted for Export, as it will keep good in any climate. In casks, 13, 27, 56, 113, 140 gallons; small casks 3s. 9d. per gall., carriage allowed. In wine bottles (not less than 3 doz.), at 9s. per doz., including bottles. Cases extra and returnable.

GEO. DURRANT & CO., Hertford.

ALBERT'S GRASSHOPPER OINTMENT AND PILLS.
1/1, 2/9, 4/6, and 11/ per box. Pills, 1/1 per box.
WHOLESALE ON USUAL TERMS.
73 FARINGDON STREET, LONDON, E.C.

QUIBELL BROTHERS,
MANUFACTURERS OF
GLUE, SIZE, GREASE, &c.
NEWARK-ON-TRENT, NOTTINGHAMSHIRE.

PURE WHITE BEESWAX

Guaranteed pure, of the best quality, in blocks, cakes, or other forms. Candles, and all other articles manufactured of Beeswax, at the lowest possible prices.

QUOTATIONS FREE ON BOARD HAMBURG AND OTHER PORTS.

Lüneburger Wax Bleaching Works, Lüneburg (Germany).

A REQUISITE FOR EVERY CHEMIST.
THOMPSON'S "EXCELSIOR"
GELATINE PILL-COATING MACHINE,

See *Chemist and Druggist Diary* for 1887, page 246.
SMALL MACHINE TO COAT 90 PILLS EACH TIME, £3 10s.
For further particulars apply to
JAS. ROBERTSON & CO., 35 George Street, EDINBURGH.
London Agents—S. MAW, SON & THOMPSON.

PERFUMES
TRIPLE EXTRACTS. CONCENTRATED.
8s. 6d. per Pint; Three Pints, 8s. 3d.
JOHNSON & CO., Wormald Row, LEEDS.

FOUND DEAD
BY SANFORD'S RAT POISON.
"I have found 145 rats killed in my farm buildings by it."—C. Wilson Offord.
"It is the most certain remedy I have ever tried. Little pellets about the size of a pea are put in the holes of their runs. I destroyed over 200 rats from one dressing with it."—C. Cook, Grange Farm, Elementary School. "It is without doubt, the best ever introduced. Price 6d. 1s., 2s. and 3s., Chemists."
SANFORD'S MICE POISON for Houses, Buildings, Corn Stacks, &c. Cannot be excelled. Has given entire satisfaction for the past 24 years. In packets 3d., 6d., 1s., and 2s. each, with directions for use, of SANFORD & SON, Sandy, Beds. Liberal terms to Chemists. Wholesale of Barclay & Son, Sanger & Son, Newbery & Sons, Edwards, and others, London (England).

Dunn's (Healthful, Useful.)
Certificate of Analysis on each tin.
Fruit-Salt
Manufactured by W. G. DUNN & CO. 21 Mincing Lane, E.C.
Works—Croydon, Surrey.
"THE COOK'S BEST FRIEND."
Price List and Sample on application.

THE ALOFAS REMEDIES
TINCTURES, PILLS, OINTMENTS, EMBROCATION, ETC.
AGENTS WANTED (will be Advertised in Local Papers). Write for Pamphlet and terms, post free.
THE ALOFAS COMPANY, Central Depot, 20 New Oxford Street, LONDON, W.C.

FLETCHER'S CONCENTRATED SHEEP DIP.
FLETCHER'S SPECIAL DIP FOR EXPORT (Double strength).
FLETCHER'S PINO PHENOL PURIFIER.
New Disinfectant. Fluid and Powder.
FLETCHER'S INSECTICIDE, for HORTICULTURAL PURPOSES.
A certain exterminator of Insect pests.
LIBERAL TERMS. AGENTS WANTED.
FLETCHER BROS. & CO., Manufacturing Chemists, GRIMSBY.

HAND-PICKED GUM ARABIC.
Wholesale and Export Druggists before buying elsewhere should apply to
FREDK. FINK & CO.
10 & 11 MINCING LANE, LONDON, E.C.

PRICE'S SANITARY SOAPS.

GLYCERINE & CARBOLIC ACID.

GLYCERINE & COAL TAR.

GLYCERINE & EUCALYPTOL.

GLYCERINE & SALICYLIC ACID.

GLYCERINE & THYMOL.

**PRICE'S PATENT CANDLE COMPANY, LIMITED,
LONDON & LIVERPOOL.**

COOK'S ANTISEPTIC SOAP

(THOMSON'S PATENT),

Has been tested in a Physiological Laboratory as a Germ Destroyer, and proved to be more efficient than any other experimented with.
(See "Journal of Chemical Industry, 1883, No. 3.) Of great value in CASES OF

**ECZEMA, RINGWORM, SCABIES, FAVUS
AND OTHER SKIN DISEASES.**

See "The Lancet," 12 May, 1888, page 936.

Price in 3-Tablet Boxes, per doz. **12/-**; Selling Price, **1/6**; in $\frac{1}{4}$ -gross Boxes, **10/6** per box.

CAN BE OBTAINED THROUGH

**MESSRS. S. MAW, SON & THOMPSON, LONDON, or of
EDWARD COOK & CO., HOUSEHOLD and TOILET SOAP MAKERS, LONDON, E.**

BRECKNELL'S SPECIALTIES.

BRECKNELL'S SKIN-SOAP.—Prize Medal.

Recommended by Eminent Medical Men, and is the best for producing a clear and healthy skin.

BRECKNELL'S SADDLE SOAP.—Prize Medal.

Highest Testimonials as to its Superiority. The best article in use for the purpose.

BRECKNELL'S HARNESS COMPOSITION.

Strongly approved and recommended. Gives Black Harness a good appearance, and preserves the Leather.

BRECKNELL'S SOAP-CREAM PASTE.

An excellent and agreeable article for cleaning and improving the appearance of Brown Leather Boots. Made specially for the purpose.

BRECKNELL, TURNER & SONS,
(TO HER MAJESTY, &c.)

81 HAYMARKET LONDON, ENGLAND.



Until further notice, an extra Bottle of the Perfume will be sent gratis with first order for one dozen, to open and place on Counter.

EUROPEAN DEPÔT:

67 HOLBORN VIADUCT, LONDON, E.C.

FERGUSON'S BALM GENUINE.

The best preparation for the Hands and Complexion, and the Infallible cure for Chaps and Roughness of the Skin.
In Red Cases, 1/ size, 9/6 dozen; 2/6 size, 22/6 dozen.

CAUTION TO BUYERS.

In consequence of the numerous imitations I have abandoned the Black Cases as used by me when in Leeds. The genuine is now enclosed in Red Cases only. Some of the imitators go so far as to say that they have purchased my Recipe. Such assertions are utterly untrue.

Order Ferguson's Balm, Genuine, Red Cases, take no other.

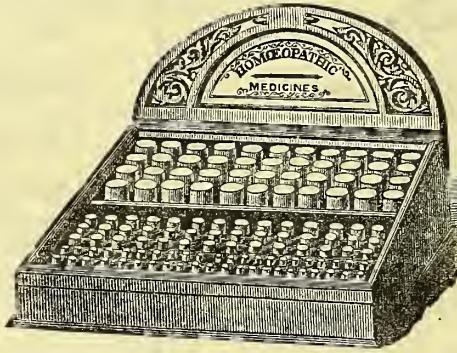
For display of my goods in the window I am prepared to pay. Terms on application to

**W. K. FERGUSON, Ph. Chemist,
TOTTENHAM, LONDON, N.**

HOMŒOPATHIC MEDICINES

SALEABLE SELECTIONS.

NO. 3.
MAHOGANY
COUNTER
SHOW-CASE.
 Price £2 12s.



DIMENSIONS.

LENGTH, 15 in.
 BREADTH, 11 in.
 HEIGHT, 5½ in.

Contents realise
 £4 8s. 6d.

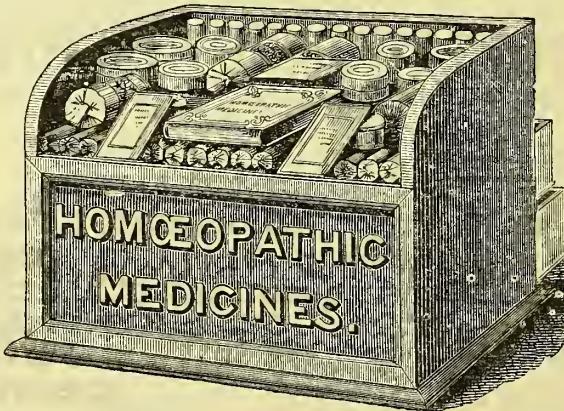
COUNTER SHOW-CASES.

GENERAL PRICE LIST.

	£	s.	d.
No. 1.—A Small Selection	1	8	0
2.—An Enlarged Assortment	2	2	0
4.—With Sundries and Two Drawers ...	3	0	0
6.—Medicines in View; Extra Supply in Drawer	6	18	0
7.—Large Case, Bent Glass Top, Handsome Tablet and Four Drawers	9	16	0

	1/ size.	6d. size.
Pilules	5/-	3/- per dozen
Tinctures	5/-	3/- "
Camphor Solution and Pilules	5/-	3/- "
Arnica External Tincture ...	7/-	4/- "
Tamus	6/-	4/- "
External Tinctures, except above	5/-	3/- "
Liniments	8/-	4/- "
Cerates	8/-	4/6 "

NO. 5.
SHOW - CASE
 WITH
BENT GLASS TOP
 AND
TWO DRAWERS.
 Price, £5 10 0



DIMENSIONS.

LENGTH, 17½ in.
 BREADTH, 12½ in.
 HEIGHT, 12 in.

Contents realise
 £9 12 6

All Prices subject to cash discount. For illustrated list send Trade Card.

JAMES EPPS & CO.
HOMŒOPATHIC CHEMISTS

~~~~~(FIRST ESTABLISHED)~~~~~

**48 THREADNEEDLE ST., LONDON.**



# LYNCH'S IMPROVED

PRIZE MEDAL,

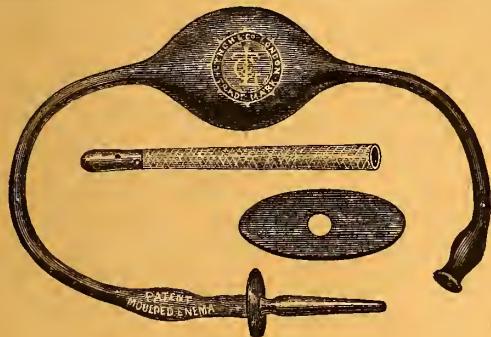


SYDNEY, 1879.

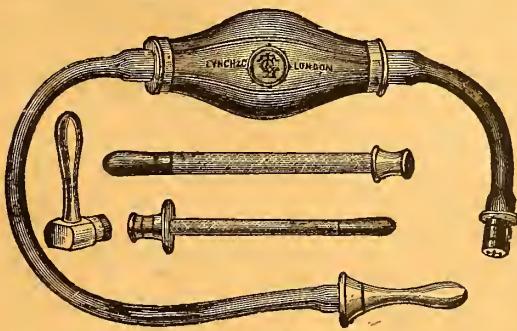
# ENEMAS

FITTED WITH PATENT GLASS VALVES.

(Patent 13,816, dated 12th October, 1887.)

**REDUCED PRICES**

No. 435 D.



Nos. 436, 437.

Catalogue Number.

|                                                                                                                                                                                                                                                                                                            | £ s. d. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 434 HIGGINSON'S PRINCIPLE, barrel shape, with bone rectum pipe, elastic-gum vagina pipe, to plug on, and patent leather shield, in slide cedar boxes ... ... ... ... ... per doz.                                                                                                                          | 1 12 0  |
| 435C Ditto, ditto, LYNCH'S, requiring no metal mounts, black, green, red, or white, india-rubber, made in one continuous piece, <i>warranted not to split</i> , and fitted with bone rectum pipe, in slide cedar boxes...per doz.                                                                          | 1 10 0  |
| 435D Ditto, ditto, with bone rectum pipe, elastic-gum vagina pipe, and leather shield, in slide cedar boxes, "                                                                                                                                                                                             | 1 15 0  |
| 435E Ditto, ditto, in oval leather box, complete ... ... ... ... ... "                                                                                                                                                                                                                                     | 2 2 0   |
| 436 LYNCH'S FAMILY, on Higginson's principle, fitted with bone bulb-pointed rectum pipe for adults, elastic-gum rectum pipe for children, elastic-gum vagina pipe and leather shield, in mahogany box...per doz.                                                                                           | 2 8 0   |
| 437 Ditto, in slide cedar box ... ... ... ... ... "                                                                                                                                                                                                                                                        | 2 2 0   |
| 437A LYNCH'S PERFECTION, in mahogany box ... ... ... ... ... "                                                                                                                                                                                                                                             | 2 17 0  |
| 437B Ditto ditto in slide cedar box ... ... ... ... ... "                                                                                                                                                                                                                                                  | 2 11 0  |
| 437E LYNCH'S COMPLETE HOUSEHOLD SYRINGE, consisting of Higginson's Enema with disconnecting mounts, fitted with bone bulb-pointed rectum pipe for adults, elastic-gum rectum pipe for children, elastic-gum vagina pipe, leather shield, and bone pipes for ear, eyes, and nose, in mahogany box, per doz. | 4 10 0  |
| Nos. 436 to 437E can be fitted with bone Angle pipe, at 4/- per doz. extra.                                                                                                                                                                                                                                |         |
| 433B HIGGINSON'S Enema, with elastic-gum vagina pipe and leather shield, fitted with ordinary valves, per doz.                                                                                                                                                                                             | 1 7 6   |

*Discount—10 per cent. Cash Monthly, 5 per cent. Half-yearly Account.***SPECIAL TERMS FOR 6 DOZEN AND UPWARDS.**

MAY BE HAD WHOLESALE OF THE PATENTEES—

**LYNCH & CO., 192 ALDERSGATE STREET, LONDON, E.C.**

AUSTRALIAN BRANCH—15 Vaughan's Chambers, 48 Queen Street, MELBOURNE.

**SOLE IMPORTERS**  
 OF  
**APOLLINARIS WATER,**  
**FRIEDRICHSHALL WATER,**  
**HUNGARIAN APERIENT WATER**  
(DIAMOND MARK)

**THE APOLLINARIS CO., LIMITED,**  
 19 REGENT STREET, LONDON, S.W.

SPECIAL PRICES ON APPLICATION.

EASY  
TEETHING

DO NOT LET YOUR CHILD DIE!

Fennings' Children's Powders Prevent Convulsions; are Cooling and Soothing.

**FENNINGS' CHILDREN'S POWDERS,**

For Children Cutting their Teeth, to Prevent Convulsions.

Sold in Stamped Boxes, at 1s. 1½d. and 2s. 9d. (great saving), with full Directions.

Do not contain Calomel, Opium, Morphia, nor anything injurious to a tender babe.

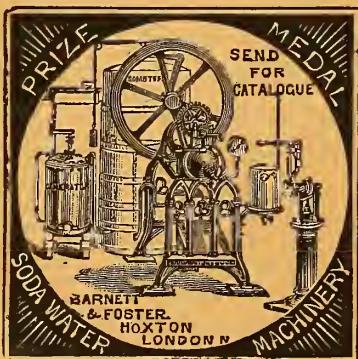
Chemists, by applying to the Patent Medicine Houses and Wholesale Chemists, can obtain, free of any charge, a supply of "FENNINGS' EVERY MOTHER'S BOOK," for Counter distribution.

SAFE  
TEETHING.

**Cadbury's Cocoa** IS SOLUBLE  
 and ABSOLUTELY PURE. ABSOLUTELY PURE.

**SODA WATER MACHINERY**

*And all Appliances for the Manufacture of all Aerated Drinks in the highest state of perfection.*



PRIZE MEDALS—London, 1862, 1873, 1874; Paris, 1867, 1878; Vienna, Philadelphia, Cape, &c. HIGHEST AWARD—Sydney, 1879-80.  
 FIRST-CLASS CERTIFICATES & 4 PRIZE MEDALS, CALCUTTA, 1883-84.  
 THREE GOLD, TWO SILVER, & TWO BRONZE MEDALS, INTERNATIONAL HEALTH EXHIBITION, LONDON, 1884. 5 FIRST ORDERS OF MERIT, ADELAIDE, 1887.

Our Machines are universally adopted throughout the world for the manufacture of all kinds of Aerated Drinks, whether in bottles, syphons, or counter fountains. There are in England alone over 2,000 factories where our Machinery is in use, besides many thousands in India and the Colonies. They are the simplest, safest, and cheapest for the purpose, and produce a highly-charged gaseous water free from metallic or foreign contamination. All our Machines have a Gasometer, and it forms a most important necessity where purity of product is required, as in this the gas is expanded and purified; it also removes the possibility of accidents by explosion, and avoids the necessity of complication—these we consider of greater importance than the saving of a few inches of floor space.

A complete Soda Water Plant, including Bottling Machine, for producing 100 dozen Lemonade, Ginger Beer, Ale, &c., per day, is supplied for £40. ILLUSTRATED CATALOGUE FORWARDED FREE.

**BARNETT & FOSTER,**  
 26<sup>T</sup> Eagle Wharf Road, New North Road, London, N.